



Constance C. Holland, AICP
Director, Office of State Planning Coordination
State of Delaware
122 William Penn Street, Suite 302
Haslet Building, Third Floor
Dover, DE 19901

12 April 2007
Via: Fed Ex

RE: PLUS review – PLUS 2006-11-11; Showfield

Dear Ms. Holland:

In regard to the above referenced project and pursuant to your comment letter dated 26 December 06, please find the following point by point response in [blue](#) 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.***

[Comment acknowledged.](#)

State Strategies/Project Location

- This project is located within levels 1, 2, and 3 according to the Strategies for State Policies and Spending. In addition, it is located within the Sussex County growth area and within the future annexation/growth area identified in the City of Lewes Comprehensive Plan. Our office has no objections to the proposed rezoning and development of this property in accordance with the relevant City or County codes and ordinances.

[Comment acknowledged.](#)

Street Design and Transportation

- Freeman Highway is an arterial road and Gills Neck Road is a local road. DelDOT's policy is to require dedication of sufficient land to provide a minimum right-of-way width of 50 feet from the inside edge of the travelway on divided highways and 30 feet from the centerline on local roads. Therefore we will require right-of-way dedication along the frontage to provide any additional width needed from this project.

[Additional right-of-way will be provided along DelDOT road frontages in accordance with DelDOT requirements.](#)



- DelDOT will also require the construction of a 10-foot wide shared use path in a 15-foot wide permanent easement across the Gills Neck Road frontages of the site.

The Developer would like the opportunity to discuss with DelDOT options to this requirement. Currently there are plans for continuing the Junction and Breakwater Trail through the Showfield site. This trail system will provide pedestrian access from the Showfield entrance on Gills Neck Road (western most entrance), through the development over to Gills Neck Road at the Canal. This trail essentially provides the same function as the shared use path requested. In addition, it is the design intent of Showfield to maintain as much of the current Gills Neck Road aesthetic as possible. The Developer and Designer will set up a meeting with DelDOT to discuss.

- A traffic impact study will be required for the proposed development.

A traffic impact study has been initiated. A scoping meeting has taken place with DelDOT and traffic count data has been submitted for DelDOT review.

- The developer should anticipate a requirement to improve Gills Neck Road to meet DelDOT's local road standards.

At the conclusion of the Traffic Impact Study all recommended improvements will be reviewed with the City of Lewes, DelDOT and the Developer to finalize actual road improvements to be made.

- The Preliminary Project Plan (Exhibit E) does not clearly distinguish streets from alleys and alleys from walkways.

The Preliminary Site plan being submitted to the City of Lewes will include a street hierarchy exhibit clearly defining the streets, alleys and walkways. Typical street cross sections will be included in the submittal.

- The proposed middle entrance to the site should be aligned opposite Black Marlin Drive.

The middle entrance location is being modified such that it is aligned opposite Black Marlin Drive.

- As a general rule, individual driveways are undesirable on collector streets.

Comment acknowledged. The revised plan eliminates driveways on the main boulevard entrance and minimizes driveways on other primary traffic streets.

- On the west side of the site, a proposed street would split into two streets and then merge back into a single street after one block. That is reasonable, but we are

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concerned about the proposed alley shown between the two streets. Traffic calming maybe needed to prevent that alley from being used as a cutthrough.

The Preliminary Site plan being submitted to the City of Lewes has been revised to minimize confusion between primary streets and alleys. All other street configurations have been evaluated and changed to provide better traffic flow. The street network will be reviewed in detail with the City of Lewes to ensure that the proper design criteria have been met.

- In the northwest part of the site, a small triangular island is proposed in what appears to be an alley. For ease of circulation, DelDOT recommends that it be eliminated.

[See comment above.](#)

- Farther east, a larger triangular island is proposed to be bounded by three streets. To reduced the paved area and maximize the utility of the open space, we recommend that one leg of the three streets be eliminated.

[See comment above.](#)

Natural and Cultural Resources

- Based on Statewide Wetland Mapping Project (SWMP) mapping, palustrine emergent and palustrine unconsolidated bottom wetlands were mapped on the subject parcel. Impacts to wetlands should be avoided, particularly because this development is within the Environmentally Sensitive Developing Area. Wetlands provide water quality benefits, attenuate flooding and provide important habitat for plants and wildlife. Vegetated buffers of no less than 100 feet should be employed from the edge of wetland complexes.

A wetlands field delineation has been performed by Coastal & Estuarine Research, Inc. The areas delineated are confined to the perimeter of the pond and the ditch from the pond to Gills Neck Road. This area will not be impacted by the development. The majority of the pond does not have lots abutting it. A minimum of 50 feet is provided as a vegetated buffer from all lot lines abutting the pond and ditch areas. All structures will be even further from the wetland line. Any recreational areas/structures within these limits will be built in accordance with State and Federal Wetland requirements.

- In areas set aside for passive open space, the developer is encouraged to consider establishment of additional forested areas or meadow-type grasses. Doing so will provide wildlife habitat and it will create recreational opportunities for residents.

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Agree. The latest design attempts to establish continuous greenways throughout the site to encourage wildlife habitat, walking opportunities for residents and potential stormwater management facilities.

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

Office of State Planning Coordination – Contact: Bryan Hall 739-3090

- This project is located within levels 1, 2, and 3 according to the Strategies for State Policies and Spending. In addition, it is located within the Sussex County growth area and within the future annexation/growth area identified in the City of Lewes Comprehensive Plan. Our office has no objections to the proposed rezoning and development of this property in accordance with the relevant City or County codes and ordinances.

Comment acknowledged.

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

This parcel contains two historic buildings (S-1056 and S-1052) and a prehistoric-period archaeological site (S-540). Three other historic buildings (S-1053, S-1054, and S-1055) are adjacent to this parcel along Gills Neck Rd. The line of the Delaware and Breakwater Junction Railroad also runs across this parcel. While this development will destroy the line, there are probably no archaeological remains associated with it, based on its raised appearance and testing elsewhere. Beers Atlas of 1868 shows only one property in this area, the Rev. D. McIlvain House. The site of this house was apparently in the path of the Freeman Hwy., near the canal. By the 1918 USGS 15' Rehoboth topographic map, six buildings appear within the parcel. The 1937 USDA aerial photograph shows a large farmstead in the center of the parcel, where S-1056 is recorded, as well as the other properties.

Small, rural, family cemeteries often are found in relation to historic farm complexes, such as the Rev. McIlvain House, usually a good distance behind or to the side of the house. The developer should be aware of Delaware's Unmarked Human Remains Act of 1987, which governs the discovery and disposition of such remains. The unexpected discovery of unmarked human remains during construction can result in significant delays while the process is carried out, and the developer may want to hire an archaeological consultant to check for the possibility of a cemetery here if this development is approved. The DHCA would have to have a copy of any archaeological report done for this purpose. They will be happy to discuss these issues with the developer; the contact person for this program is Faye Stocum, 302-736-7400.

Upon approval of the development, the Developer will investigate the possibility of any family cemeteries and report back to the DHCA with any findings.

The DHCA requests that the developer include sufficient landscaping to protect the nearby historic houses from any visual or noise intrusion from this development. They would like

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an opportunity to document the surviving buildings prior to any demolition or rebuilding activities. If time permits, we would also like the opportunity to examine the known archaeological site and look for any others, to learn something about their location, nature, and extent prior to any ground-disturbing activities.

Upon approval of the development, the Developer will coordinate with the DHCA as it relates to further site investigations. The landscaping plan will be provided for agency review.

Department of Transportation – Contact: Bill Brockenbrough 760-2109

- 1) Freeman Highway is an arterial road and Gills Neck Road is a local road. DelDOT's policy is to require dedication of sufficient land to provide a minimum right-of-way width of 50 feet from the inside edge of the travelway on divided highways and 30 feet from the centerline on local roads. Therefore we will require right-of-way dedication along the frontage to provide any additional width needed from this project.

Additional right-of-way will be provided along DelDOT road frontages in accordance with DelDOT requirements.

- 2) DelDOT will also require the construction of a 10-foot wide shared use path in a 15-foot wide permanent easement across the Gills Neck Road frontages of the site. Current plans for the Hawkseye subdivision and other pending developments along the south side of Gills Neck Road would continue this path out to Kings Highway. Therefore they will want to work with the developer in locating an appropriate point for the path to cross Gills Neck Road. Preliminarily, the crossing should be located at the west site entrance and should be built as part of that entrance.

The Developer would like the opportunity to discuss with DelDOT options to this requirement. Currently there are plans for continuing the Junction and Breakwater Trail through the Showfield site. This trail system will provide pedestrian access from the Showfield entrance on Gills Neck Road (western most entrance), through the development over to Gills Neck Road at the Canal. This trail essentially provides the same function as the shared use path requested. In addition, it is the design intent of Showfield to maintain as much of the current Gills Neck Road aesthetic as possible. The Developer and Designer will set up a meeting with DelDOT to discuss.

- 3) A traffic impact study will be required for the proposed development. On November 17, 2006, a meeting was held to set the scope of work for that study. A copy of the minutes of that meeting is enclosed. One issue that was not resolved at that meeting is the development's connection, or lack thereof, to Monroe Avenue. The plan presented does not continue Monroe Avenue across Freeman Highway into the proposed development even though a stub street presently exists for that purpose. DelDOT understands from the discussion at the PLUS meeting that the connection is being added to the plan. While they do not, presently, require such a connection, they would like to hear from the City and the Delaware River and Bay Authority on this

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subject and any other issues they might like to have addressed in the study. A meeting has been scheduled for December 13, 2006, to discuss this matter.

A traffic impact study has been initiated. A scoping meeting has taken place with DelDOT and traffic count data has been submitted for DelDOT review. The revised plan does include the option for a site entrance from Freeman Highway across from the current Monroe Street location. The Developer is initiating discussions with the City of Lewes, DelDOT and the Delaware River and Bay Authority on the impacts of this connection. This potential connection is being considered during the TIS and the findings of the TIS will also provide some data relative to the feasibility of this connection. The December 13th referenced above was scheduled to be held prior to the receipt of these PLUS comments (comments dated 26December2006), therefore the Designer and Developer have no knowledge of the outcome of the meeting.

- 4) The developer should anticipate a requirement to improve Gills Neck Road to meet DelDOT's local road standards. These requirements include but are not limited to 11-foot lanes and 5-foot shoulders. Notably, they also include requirements for curve radii. Immediately east of the proposed middle site entrance, there is a pair of obviously substandard curves. The plan for the development should include the realignment of the road through this area. DelDOT maintenance of Gills Neck Road stops about 1,000 feet east of these curves, but DelDOT would recommend that the City require the developer to examine and if necessary improve the alignment of the road within the City limits.

At the conclusion of the Traffic Impact Study all recommended improvements will be reviewed with the City of Lewes, DelDOT and the Developer to finalize actual road improvements to be made. The curves referenced above will be considered in this discussion. This section of roadway is a well known aesthetic of Gills Neck Road and is a feature the Developer/Designer would like to maintain post development. The TIS will provide insight into the design specifics but it is the opinion of the Developer that the curves in their fundamental configuration serve as a traffic slowing device for this section of Gills Neck Road.

- 5) The Preliminary Project Plan (Exhibit E) does not clearly distinguish streets from alleys and alleys from walkways. DelDOT recommends that the City require a plan that does so and satisfy themselves that the street design allows drivers to circulate within the development without using the alleys or turning around in driveways. They also have the following, more specific comments on the plan:
 - a) The proposed middle entrance to the site should be aligned opposite Black Marlin Drive.

The middle entrance location is being modified such that it is aligned opposite Black Marlin Drive.

- b) As a general rule, individual driveways are undesirable on collector streets. It is difficult to determine from the plan presented how many vehicles would use each element



of the proposed entrances, but DelDOT standards prohibit driveways on streets serving more than 300 dwellings. Therefore DelDOT suggests that the developer consider redesigning the lot layout near the east and middle site entrances to eliminate driveways within the first block or two of the entrances from Gills Neck Road.

[Comment acknowledged. The revised plan eliminates driveways on the main boulevard entrance and minimizes driveways on other primary traffic streets.](#)

- c) On the west side of the site, a proposed street would split into two streets and then merge back into a single street after one block. That is reasonable, but we are concerned about the proposed alley shown between the two streets. Traffic calming maybe needed to prevent that alley from being used as a cut-through.
- d) In the northwest part of the site, a small triangular island is proposed in what appears to be an alley. For ease of circulation, DelDOT recommends that it be eliminated.
- e) Farther east, a larger triangular island is proposed to be bounded by three streets. To reduced the paved area and maximize the utility of the open space, we recommend that one leg of the three streets be eliminated.

[The Preliminary Site plan being submitted to the City of Lewes has been revised to minimize confusion between primary streets and alleys. All other street configurations have been evaluated and changed to provide better traffic flow. The street network will be reviewed in detail with the City of Lewes to ensure that the proper design criteria have been met.](#)

- 6) The developer's site engineer should contact Mr. Fiori regarding the specific requirements for entrance improvements. Mr. Fiori may be reached at (302) 760-2157.

[The Designer will contact Mr. Fiori regarding all entrance designs and requirements.](#)

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

Portions or all of the lands associated with this proposal are within the Livable Delaware Green Infrastructure area established under Governor Minner's Executive Order #61 that represents a network of ecologically important natural resource lands of special state conservation interest.

Green infrastructure is defined as Delaware's natural life support system of parks and preserves, woodlands and wildlife areas, wetlands and waterways, productive agricultural and forest land, greenways, cultural, historic and recreational sites and other natural areas all with conservation value. Preserving Delaware's Green Infrastructure network will support and



enhance biodiversity and functional ecosystems, protect native plant and animal species, improve air and water quality, prevent flooding, lessen the disruption to natural landscapes, provide opportunities for profitable farming and forestry enterprises, limit invasive species, and foster ecotourism.

Voluntary stewardship by private landowners is essential to green infrastructure conservation in Delaware, since approximately 80 percent of the State's land base is in private hands. It is in that spirit of stewardship that the Department appeals to the landowner and development team to protect sensitive resources through an appropriate site design.

Agree. The Designer is working with DNREC, in particular the Stormwater Management Division, to orchestrate a responsible design. Meetings with Frank Piorko (DNREC) and DNREC Consultant John Gaadt have taken place and are continuing throughout the design process to ensure good practices are utilized.

Soils

Based on the Sussex County soil survey update, Evesboro, Downer, Fort Mott, Greenwich, Fallsington and Manahawkin were mapped on the subject parcel. Evesboro is an excessively well-drained upland soil that has moderate limitations of account of its rapid permeability. Downer, Fort Mott, and Greenwich are well-drained upland soils that, generally, have few limitations for development. Fallsington is a poorly-drained wetland associated (hydric) soil that has severe limitations for development. Manahawkin is a very poorly-drained wetland associated (hydric) floodplain soil that has severe limitations for development.

Comment acknowledged. Site specific soil borings are being performed to determine the characteristics of the soil for stormwater management and geotechnical performance.

Wetlands

Based on Statewide Wetland Mapping Project (SWMP) mapping, palustrine emergent and palustrine unconsolidated bottom wetlands were mapped on the subject parcel. Impacts to wetlands should be avoided, particularly because this development is within the Environmentally Sensitive Developing Area. Wetlands provide water quality benefits, attenuate flooding and provide important habitat for plants and wildlife. Vegetated buffers of no less than 100 feet should be employed from the edge of wetland complexes. The developer should note that both DNREC and Army Corps of Engineers discourage allowing lot lines to contain wetlands to minimize potential cumulative impacts resulting from unauthorized and/or illegal activities and disturbances that can be caused by homeowners.

Impacts to Palustrine wetlands are regulated by the Army Corps of Engineers through Section 404 of the Clean Water Act. In situations where the applicant believes that the delineated wetlands on their parcel are nonjurisdictional isolated wetlands, the Corps must be contacted to make the final jurisdictional assessment. They can be reached by phone at 736-9763.

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In addition, individual 404 permits and certain Nationwide Permits from the Army Corps of Engineers also require 401 Water Quality Certification from the DNREC Wetland and Subaqueous Land Section and Coastal Zone Federal Consistency Certification from the DNREC Division of Soil and Water Conservation, Delaware Coastal Programs Section. Each of these certifications represents a separate permitting process.

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

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.

As noted previously, this parcel contains SWMP-mapped headwater riparian wetlands. Headwater riparian wetlands are important for the protection of water quality and the maintenance/integrity of the ecological functions throughout the length of a stream, including the floodplain system and/or water bodies further downstream. Since streams are a major avenue for nutrient-laden stormwater and sediment runoff their protection deserves the highest priority.

A wetlands field delineation has been performed by Coastal & Estuarine Research, Inc. The areas delineated are confined to the perimeter of the pond and the ditch from the pond to Gills Neck Road. This area will not be impacted by the development. The majority of the pond does not have lots abutting it. A minimum of 50 feet is provided as a vegetated buffer from all lot lines abutting the pond and ditch areas.. All structures will be even further from the wetland line. Any recreational areas/structures within these limits will be built in accordance with State and Federal Wetland requirements.

Numerous SWM practices will be employed to ensure water quality is maintained. As indicated above, the Designer is working specifically with DNREC's Stormwater Management Department to implement Best Management Practices (BMP's) that can be utilized for both water quality and quantity control. A specific SWM meeting is being scheduled with Frank Piorko and the Sussex Conservation District.

Impervious Cover

Based on a review of the PLUS application, post-development surface imperviousness was estimated via calculation to be about 28 percent. However, given the scope and density of this project, this estimate is likely an **underestimate**. The applicant's apparent use of natural areas (wetlands or buffers) and functional amenity areas (stormwater management structures) for meeting the County's open space requirements artificially lowers the amount of this project's post-development projection of surface imperviousness, ultimately

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underestimating its environmental impacts. Furthermore, the applicant should also realize that all created forms of constructed surface imperviousness (i.e., rooftops, sidewalks, and roads) and their extent should be comprehensively accounted for when calculating surface imperviousness. It was not clear from the information submitted whether these factors were comprehensively assessed by the applicant. It is strongly recommended that the applicant address all of the above-mentioned concerns in the finalized calculation for surface imperviousness.

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

The impervious calculations have been reviewed and the following estimates (acreage and percentage of site) are provided:

Total site area including the wetland/pond area 230.47 ac.
 Total site area not including the pond 214.0 ac.

	<u>Acreage</u>	<u>% of Overall Site</u>	<u>% of Site without Pond</u>
Roadways	22.98 ac.	10.0%	10.7%
Sidewalks	4.24 ac.	1.8%	2.0%
Driveways	4.18 ac.	1.8%	2.0%
Parking lots	0.79 ac.	0.3%	0.4%
Rooftops	24.15 ac.	10.5%	11.3%
Total	56.34 ac.	24.4%	26.4%

The buffers, ponds, and other designated open space are truly functional open space in this development and the calculations for such open space will reflect these areas.

During final engineering, the stormwater management calculations will account for all impervious services in accordance with regulatory requirements and industry standards. Pervious materials will be utilized where practical and careful consideration will be paid to landscaping that will assist in reducing impervious coverage.

ERES Waters

This project is located adjacent to receiving waters of the Inland Bays designated as waters having Exceptional Recreational or Ecological Significance (ERES). ERES waters are recognized as special assets of the State, and shall be protected and/ or restored, to the



maximum extent practicable, to their natural condition. Provisions in Section 5.6 of Delaware's "Surface Water Quality Standards" (as amended July 11, 2004), specify that all designated ERES waters and receiving tributaries develop a "pollution control strategy" to reduce non-point sources of pollutants through implementation of Best Management Practices (BMPs). Best Management Practices as defined in subsection 5.6.3.5 of this section, expressly authorizes the Department to provide standards for controlling the addition of pollutants and reducing them to the greatest degree achievable and, where practicable, implementation of a standard requiring no discharge of pollutants.

The pond located on site and the nearby Lewes/Rehoboth Canal are certainly ERES waters. The intent of the site design is to maintain and enhance the pond area to serve as an amenity to the development and the City of Lewes. The SWM BMP's that will be employed will be designed such that the pollutant reduction meets/exceeds the requirements outlined by both DNREC and the Sussex Conservation District. As indicated above, the Designer is working with Frank Piorko and the Sussex Conservation District to establish proper BMP's.

TMDLs

Total Maximum Daily Loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the Inland Bays 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. This project is located in the **low** nutrient reduction area requiring a 40 percent reduction in nitrogen and phosphorus, respectively. A Total Maximum Daily Load (TMDL) is the maximum level of pollution for which a water quality limited water body can assimilate without compromising use and recreational goals such as swimming, fishing, drinking water, and shell fish harvesting.

[See comment above.](#)

Compliance with TMDLs through the PCS

As stated above, Total Maximum Daily Loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the Inland Bays Watershed. The TMDL calls for a 40% reduction in nitrogen and phosphorus from baseline conditions. A Pollution Control Strategy (PCS) will provide the regulatory framework for achieving them. The Department developed an assessment tool to evaluate how your proposed development may reduce nutrients to meet the TMDL requirements. Additional reductions may be possible through the implementation of Best Management Practices such as wider vegetated buffers along watercourses, and the use of innovative stormwater management treatment trains. Contact Lyle Jones at 302-739-9939 for more information on the assessment tool.

[See comment above. In addition, the Designer will contact Mr. Lyle Jones for more information relative to the TMDL tool.](#)

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Water Resource Protection Areas

The Water Supply Section has determined that a significant portion of the proposed development falls within an excellent ground-water recharge area (see following map and attached map). The review did not find any wellhead protection areas.

Excellent recharge areas are near-surface areas within which precipitation infiltrates the land surface to the unconfined aquifer at a more rapid rate than other areas. The Delaware Geological Survey Report of Investigations No. 66 published in 2004 identifies and maps recharge areas of Kent and Sussex Counties. The intent of the project was to identify areas of excellent recharge to protect them as critical areas. The Report states that the recharge potential “map categories are indicators of how fast contaminants will move and how much water may become contaminated” (Andres, 2004, pg 1). This proposed development shows storm-water management ponds within the excellent ground-water recharge area.

The construction phase of this type of pond 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.

The proposed development would change the total impervious cover from 0.5% to approximately 28%. Developer on the PLUS application provided these numbers.

The 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. A water balance calculation 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.

Ideally, relocating any open space areas to the part of the parcel within the excellent ground-water recharge area would decrease the total impervious area. Augmenting the groundwater recharge with clean rooftop run-off systems are another alternative to maintaining the quality and quantity of water recharging the aquifer.

Please reference the attached diagram for an overlay of the latest plan vs. the recharge areas. The area considered to be an excellent recharge area does contain development however the design considers primarily single family lots in these areas to minimize the amount of impervious area. The more dense multi- family section is not contained in the excellent recharge area.



Map of Showfield (PLUS 2006-11-02) Excellent ground-water recharge potential areas are highlighted in green. The impacted parcels are outlined in blue.

References

Andres, A. Scott, 2004, Ground-Water Recharge Potential Mapping in Kent and Sussex Counties, Delaware: Delaware Geological Survey Report of Investigations No. 66, p. 14.

<http://www.udel.edu/dgs/Publications/pubform.html#investigations>

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.

Listed as: "Supplement 1 – Groundwater Recharge Design Methodology"

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

Climatic Water Budget

Thorntwaite, C. W. and Mather, J. R., 1957, Instructions and Tables for Computing Potential Evapotranspiration and the Water Balance: Drexel Institute of Technology, Laboratory of Climatology, Volume x, Number 3

Water Supply

The project information sheets state that the City of Lewes will be used to provide water for the proposed project. DNREC records indicate that the project is located within the public water service area granted to Lewes Board of Public Works under Certificate of Public Convenience and Necessity number 01-CPCN-07 and 03-CPCN-06. According to SB 135 that was signed on June 30, 2003 by Governor Minner, the municipality is required to give notice to the Public Service Commission when the annexation is complete. It is recommended that the developer contact the Lewes Board of Public Works to determine the availability of public water. Any questions concerning CPCNs should be directed to the Public Service Commission at 302-739-4247. 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 well(s).

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

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processing the well permit applications into the construction schedule. Dewatering well permit applications typically take approximately four weeks to process, which allows the necessary time for technical review and advertising.

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

The Lewes Board of Public Works has been contacted and discussions on water supply are being held with the City's engineer. As the design evolves Mr. Rick Rios will be contacted to discuss the requirements for wells and/or dewatering requirements.

Sediment and Erosion Control/Stormwater Management

Standard Comments:

A detailed sediment and stormwater plan will be required prior to any land disturbing activity taking place on the site. The plan review and approval as well as construction inspection will be coordinated through the Sussex Conservation District. Contact Jessica Watson, Program Manager, at (302) 856-7219 for details regarding submittal requirements and fees.

It is strongly recommended that you contact the Sussex Conservation District to schedule a pre-application meeting to discuss the sediment and erosion control and stormwater management components of the plan. The site topography, soils mapping, pre- and postdevelopment runoff, and proposed method(s) and location(s) of stormwater management should be brought to the meeting for discussion.

A Notice of Intent (NOI) for Stormwater Discharges Associated with Construction Activity must be submitted to the Division of Soil and Water Conservation along with the \$195 NOI fee prior to plan approval.

Applying practices to mimic the pre-development hydrology on the site, promote recharge, maximize the use of existing natural features on the site, and limit the reliance on structural stormwater components, such as maintaining open spaces, should be considered in the overall design of the project as a stormwater management technique.

Each stormwater management facility should have an adequate outlet for release of stormwater. Any drainage conveyed onto this site from neighboring properties must be adequately conveyed through the site to the discharge point without interruption.

Clearly address how Stormwater Quality and Quantity Treatment will be provided. If this project is eligible for a Quantity Waiver, please make the request in the stormwater narrative citing the specific regulation.

Please indicate on the sediment and stormwater management plan who shall be responsible for maintenance of the stormwater management facilities both during construction and after.

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During the design of the sediment control and stormwater management plan, considerations should be made for maintenance (i.e. access, easements, etc.) of any structures or facilities.

If a stormwater management pond is going to be utilized as a sediment trap/basin during construction it must be designed to accommodate 3600 cubic feet of storage per acre of contributing drainage area until project stabilization is complete.

All ponds are required to be constructed per Pond Code 378.

Please note that if the stormwater facilities will impact wetlands, a permit must be provided to the District prior to receiving approval. Please address.

A Certified Construction Reviewer (CCR) is required for any project that is 50 acres or greater.

DNREC regulations require no more than 20 acres to be disturbed at more time. A phased erosion and sediment control plan and sequence of construction will be required.

Under the DNREC Health and Safety Memo of 2000, all wet ponds are required to have an open space depth of 3 feet or more that comprises 50-75 percent of the area of the pond.

Consideration should be made for any adjacent properties during the design of the project, including drainage and erosion/sediment control.

As indicated above, the Designer has initiated meetings with DNREC's SWM Division and the Sussex Conservation District (SCD). SCD is reviewing some preliminary requests now for quantity control waivers since the site is located in close proximity to tidal waters. During the final engineering phase all SWM calculations and designs will be submitted to SCD for their detailed review. All BMP's will be designed and built in accordance with DNREC and SCD requirements. The CCR review will be a critical component during the construction activities to ensure that the designs are implemented correctly.

Open Space

In areas set aside for passive open space, the developer is encouraged to consider establishment of additional forested areas or meadow-type grasses. Doing so will provide wildlife habitat and it will create recreational opportunities for residents. 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. Natural habitat implementation efforts should be targeted to open space areas adjacent to wetlands. Natural habitat could consist of reforesting portions of open space or establishing meadow grasses. The developer is encouraged to review "Community Spaces, Natural Places: A guide to restoration,

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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/>.

In addition, a detailed open space management plan should be recorded on the record plan. This plan should outline how to manage each open space area, as well as invasive species. 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.

Open space is a critical component of the Showfield design. Continuous greenways are being designed such that there is continuity for both people and habitats to travel throughout the site. The pond area and the proposed Junction and Breakwater Trail will be managed open space for public use. All open space, including small pocket parks, will be management by the HOA and protected from future development. No lot lines will be designed to infringe upon protected areas. An Open Space Management plan will be established and will become part of the recorded subdivision.

Nuisance Geese

The applicant indicated that 'appropriate stormwater management measures' would be taken for nuisance species; however, methods were not discussed. The applicant did indicate that 50-foot buffers would be left intact around water features. We recommend that the buffer be planted with native species of trees, shrubs, and tall grasses as nuisance geese do not feel as safe if they can't scan the surrounding area for 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 point in time the exact measures to be taken are not known. The Designer/Developer will be hiring a consultant to assist in determining the best methods for nuisance geese control. The planted buffer solution is one that has been successful in other subdivisions and at a minimum will be utilized here. Although the Division of Fish and Wildlife does not provide control services we will consult with them for inputs on the final design methods.

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

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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.

Comment acknowledged. At this point in time the Developer has not committed to a particular builder/builders but selection of such will certainly consider the builder's commitment to the minimizing waste.

Site Investigation and Restoration

There were three SIRB sites within a half mile radius of the proposed site:

1. Pagonis Property (DE-1035) is located west of the proposed site. It was investigated in 1995. The recommendation was no further action. DNREC does not foresee any negative impact on the proposed site.
2. Lewes Coal and Gas (DE-190) is located west of the proposed site. PAHs were detected during an investigation in 1989. Further investigation revealed presence of BTEX and TPH at concentrations slightly above the URS values. A remedial Investigation (RI) to determine the extent and degree of contamination is complete. The RI recommended an O & M plan to monitor the contaminants. This plan has been implemented. The contaminants are expected to naturally attenuate with time. **DNREC recommends public water use at the proposed site.**
3. Lewes Site (DE-217) is located north of the proposed site. A preliminary assessment was conducted. No further action was recommended. Therefore, DNREC does not foresee any negative impact on the proposed site.

Comment acknowledged.

Air Quality

Once complete, vehicle emissions associated with this project are estimated to be 46.0 tons (92,093.7 pounds) per year of VOC (volatile organic compounds), 38.1 tons (76,247.4 pounds) per year of NO_x (nitrogen oxides), 28.1 tons (56,256.7 pounds) per year of SO₂ (sulfur dioxide), 2.5 ton (5,007.8 pounds) per year of fine particulates and 3,851.8 tons (7,703,523.9 pounds) per year of CO₂ (carbon dioxide).

Emissions from area sources associated with this project are estimated to be 18.6 tons (37,145.6 pounds) per year of VOC (volatile organic compounds), 2.0 ton (4,087.1 pounds) per year of NO_x (nitrogen oxides), 1.7 ton (3,391.7 pounds) per year of SO₂ (sulfur dioxide), 2.2 ton (4,376.9 pounds) per year of fine particulates and 75.3 tons (150,579.9 pounds) per year of CO₂ (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 7.4 tons (14,721.8 pounds) per year of NO_x (nitrogen oxides), 25.6 tons (51,206.4 pounds) per year of SO₂ (sulfur dioxide) and 3,776.5 tons (7,552,944.0 pounds) per year of CO₂ (carbon dioxide).

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	VOC	NO _x	SO ₂	PM _{2.5}	CO ₂
Mobile	46.0	38.1	28.1	2.5	3851.8
Residential	18.6	2.0	1.7	2.2	75.3
Electrical					
Power		7.4	25.6		3776.5
TOTAL	64.6	47.5	55.4	4.7	7703.6

For this project the electrical usage via electric power plant generation alone totaled to produce an additional 7.4 tons of nitrogen oxides per year and 25.6 tons of sulfur dioxide per year.

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

“ENERGY STAR qualified homes are independently verified to be at least 30% more energy efficient than homes built to the 1993 national Model Energy Code or 15% more efficient than state energy code, whichever is more rigorous. These savings are based on heating, cooling, and hot water energy use and are typically achieved through a combination of:

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

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

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

Comments acknowledged. The Developer has not committed to a particular builder/builders at this point in time, however the selection of such will certainly consider the builder’s commitment to the Energy Star Program. Numerous tree plantings and other vegetation plantings that will occur on the site will assist in providing improved air quality.



State Fire Marshal's Office – Contact: Duane Fox 856-5298

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):

❖ ***This Agency has no objection to the re-zoning request. The information provided below shall be considered when plans are being designed.***

a. Fire Protection Water Requirements:

- Water distribution system capable of delivering at least 1000 gpm for 1-hour duration, at 20-psi residual pressure is required. Fire hydrants with 800 feet spacing on centers. (Assembly, Apartments, and 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 or more, 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 Gill's Neck 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.

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- 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.

Comments acknowledged. Discussions have begun with the City of Lewes officials relative to Fire Department requirements/concerns. The plan will be reviewed in detail with the City Fire Department to ensure adequate access is provided for protection. During the final engineering process a Fire Marshal plan will be submitted to the State Fire Marshal for review and approval.

Department of Agriculture - Contact: Scott Blaier 698-4500

The Delaware Department of Agriculture has no objections to the proposed subdivision application. The *Strategies for State Policies and Spending* encourages environmentally responsible development in areas in Investment Levels 1, 2 and 3.

Some of this site has been 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

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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.

[See comment above relative to ground water recharge.](#)

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.

[Comment acknowledged. A detailed landscaping plan will be developed to incorporate the proper tree selection and placement.](#)

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.

[Comment acknowledged. A detailed landscaping plan will be developed to incorporate the proper tree selection and placement.](#)

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.

[At this point in time there have been no decisions made relative to the use of natural gas or propane on the site. As the final engineering process takes place the](#)

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Designer will contact Mr. Malak Michael to discuss options, details and requirements for such utilities.

Delaware State Housing Authority – Contact Vicki Walsh 739-4263

This proposal is for a master planned community of 600 residential units on 230 acres, located adjacent to and east of Theodore Freeman Highway, south and west of Gills Neck Road, adjacent to and north of Breakwater subdivision, partially in Lewes. According to the *State Strategies Map*, the proposal is located in Investment Level 1, 2 and 3 areas. As a general planning practice, DSHA encourages residential development inside growth zones such as this, where residents will have proximity to services, markets, and employment opportunities. The 2003 Statewide Housing Needs Assessment indicates that there are serious housing challenges in the Lewes CCD. Of the 10,218 units in this CCD, 699 are substandard, and 2,711 are occupied by low-income households. In addition, real estate data collected by DSHA for the second quarter of 2006 indicates that the median home price is \$332,000, which is outside the affordability level of low- and moderate income households. Conversely, the affordability price for low- and moderate-income households earning 100% of area median income is estimated to be \$171,216. Therefore, it is recommended, as part of the annexation process, that units targeted for first time homebuyers be required to have a long term affordability mechanism attached to the units to ensure the homes will be affordable to first time homebuyers.

Comment acknowledged. Affordable housing is a topic of concern for the City of Lewes as well. The Developer will be initiating discussions with the City Council on this topic. To date no specifics have been outlined. There will be a very diverse mixture of housing options within Showfield. This alone will provide a variation of cost points for different users.

Department of Education – Contact: John Marinucci 739-4658

This proposed development is in the Cape Henlopen School District.

DOE offers the following comments on behalf of the Cape Henlopen School District.

1. Using the DOE standard formula, this development will generate an estimated 300 students.
2. DOE records indicate that the Cape Henlopen School Districts' *elementary schools are not at or beyond 100% of current capacity* based on September 30, 2005 elementary enrollment.
3. DOE records indicate that the Cape Henlopen School Districts' *secondary schools are not at or beyond 100% of current capacity* based on September 30, 2005 secondary enrollment.
4. While the Cape Henlopen School District secondary and elementary schools are not currently beyond capacity, **the district does NOT** have adequate student capacity to accommodate the additional students likely to be generated from this development given the number of planned and recorded residential sub divisions within district boundaries.
5. Continued development will cause significant burden to the Cape Henlopen School District without the provision for additional educational infrastructure.

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6. The developer is strongly encouraged to contact the Cape Henlopen School District Administration to address the issue of school over-crowding that this development will exacerbate.
7. DOE requests the developer work with the Cape Henlopen School District transportation department to establish developer supplied bus stop shelter ROW and shelter structures, interspersed throughout the development as determined and recommended by the school district.

The Developer will be in contact with the Cape Henlopen School District to discuss any potential impacts that Showfield may have on the school district.

Sussex County – Contact: Richard Kautz 855-7878

A portion of the proposed project is within the boundary of the West Rehoboth Expansion of the Dewey Beach Sanitary District (WRE), a County operated sewer system. The PLUS application indicates the entire project will be annexed into the City of Lewes and will receive sewer service from the City's wastewater system. Sussex County supports the entire project annexing into the City of Lewes and connecting to the City of Lewes wastewater system.

The portion of the project that is located within the boundary of the WRE must be deannexed from the WRE before the project can connect to the City of Lewes System. A de-annexation process is similar to the procedure for being brought into a sewer district. It requires advertising and posting Public Notices, then conducting a Public Hearing followed by a majority vote of the Sussex County Council approving the de-annexation. There will be a fee of \$1500.00 to cover the cost of advertising and administrative procedures. A letter from the applicant requesting de-annexation should be submitted to the Utility Planning Division of the Sussex County Engineering Department.

Comment acknowledged. The Developer will be in contact with The Sussex County Engineering Department to administer the appropriate methods for de-annexation from the WRE.

Upon your review of the above, should you have any questions or require additional information, please do not hesitate to contact this office at 302.645.0777. Thank you.

Sincerely,
Element

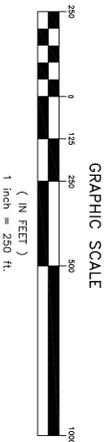
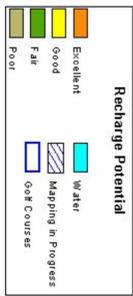
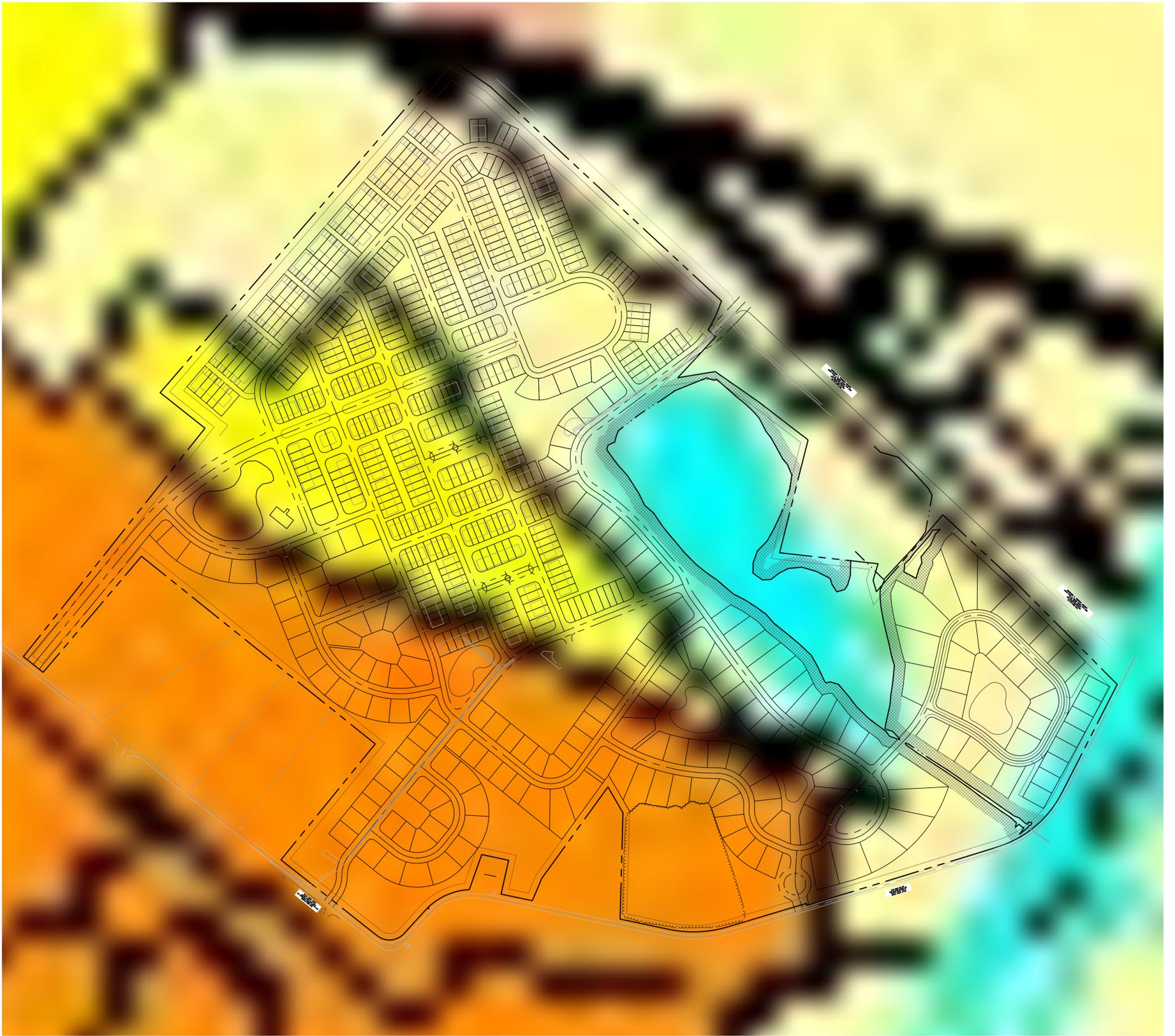
Douglas M. Warner, PE

CC: City of Lewes (w/enc)
Bryce Lingo (w/enc)
File

Parcel #	Area								
199	4189 SQ.FT.	249	4690 SQ.FT.	299	3353 SQ.FT.	349	3360 SQ.FT.	399	3535 SQ.FT.
200	3360 SQ.FT.	250	4690 SQ.FT.	300	3353 SQ.FT.	350	3360 SQ.FT.	400	2725 SQ.FT.
201	3360 SQ.FT.	251	4690 SQ.FT.	301	4191 SQ.FT.	351	3360 SQ.FT.	401	2725 SQ.FT.
202	3360 SQ.FT.	252	5900 SQ.FT.	302	4200 SQ.FT.	352	4200 SQ.FT.	402	3391 SQ.FT.
203	4200 SQ.FT.	253	5900 SQ.FT.	303	3360 SQ.FT.	353	4200 SQ.FT.	403	3207 SQ.FT.
204	4200 SQ.FT.	254	4690 SQ.FT.	304	3360 SQ.FT.	354	3360 SQ.FT.	404	2725 SQ.FT.
205	3443 SQ.FT.	255	4690 SQ.FT.	305	3360 SQ.FT.	355	3360 SQ.FT.	405	2725 SQ.FT.
206	3443 SQ.FT.	256	4690 SQ.FT.	306	4200 SQ.FT.	356	3360 SQ.FT.	406	3535 SQ.FT.
207	3443 SQ.FT.	257	7140 SQ.FT.	307	4200 SQ.FT.	357	4068 SQ.FT.	407	3535 SQ.FT.
208	4281 SQ.FT.	258	7140 SQ.FT.	308	3360 SQ.FT.	358	4068 SQ.FT.	408	2725 SQ.FT.
209	4678 SQ.FT.	259	4690 SQ.FT.	309	3360 SQ.FT.	359	3360 SQ.FT.	409	2725 SQ.FT.
210	3520 SQ.FT.	260	4690 SQ.FT.	310	3360 SQ.FT.	360	3360 SQ.FT.	410	3207 SQ.FT.
211	3399 SQ.FT.	261	4690 SQ.FT.	311	3360 SQ.FT.	361	3360 SQ.FT.	411	3207 SQ.FT.
212	3399 SQ.FT.	262	5900 SQ.FT.	312	4200 SQ.FT.	362	4200 SQ.FT.	412	2725 SQ.FT.
213	4337 SQ.FT.	263	5900 SQ.FT.	313	4200 SQ.FT.	363	4200 SQ.FT.	413	2725 SQ.FT.
214	4337 SQ.FT.	264	4690 SQ.FT.	314	3360 SQ.FT.	364	3360 SQ.FT.	414	3535 SQ.FT.
215	3399 SQ.FT.	265	4690 SQ.FT.	315	3360 SQ.FT.	365	3360 SQ.FT.	415	3535 SQ.FT.
216	3378 SQ.FT.	266	4690 SQ.FT.	316	3360 SQ.FT.	366	3360 SQ.FT.	416	2725 SQ.FT.
217	3520 SQ.FT.	267	7140 SQ.FT.	317	3360 SQ.FT.	367	4200 SQ.FT.	417	2725 SQ.FT.
218	4678 SQ.FT.	268	7105 SQ.FT.	318	4200 SQ.FT.	368	4200 SQ.FT.	418	3207 SQ.FT.
219	4145 SQ.FT.	269	4690 SQ.FT.	319	4303 SQ.FT.	369	4207 SQ.FT.	419	5033 SQ.FT.
220	3360 SQ.FT.	270	4690 SQ.FT.	320	3974 SQ.FT.	370	4200 SQ.FT.	420	3600 SQ.FT.
221	3360 SQ.FT.	271	4690 SQ.FT.	321	4282 SQ.FT.	371	4200 SQ.FT.	421	3600 SQ.FT.
222	3360 SQ.FT.	272	5900 SQ.FT.	322	3948 SQ.FT.	372	4200 SQ.FT.	422	3600 SQ.FT.
223	4200 SQ.FT.	273	5900 SQ.FT.	323	4182 SQ.FT.	373	3360 SQ.FT.	423	3600 SQ.FT.
224	4200 SQ.FT.	274	4690 SQ.FT.	324	4200 SQ.FT.	374	3360 SQ.FT.	424	5033 SQ.FT.
225	3360 SQ.FT.	275	4690 SQ.FT.	325	4256 SQ.FT.	375	3360 SQ.FT.	425	5033 SQ.FT.
226	3360 SQ.FT.	276	4690 SQ.FT.	326	3360 SQ.FT.	376	3360 SQ.FT.	426	3600 SQ.FT.
227	3360 SQ.FT.	277	7140 SQ.FT.	327	4200 SQ.FT.	377	3360 SQ.FT.	427	3600 SQ.FT.
228	4200 SQ.FT.	278	7105 SQ.FT.	328	4200 SQ.FT.	378	3360 SQ.FT.	428	3600 SQ.FT.
229	4200 SQ.FT.	279	4690 SQ.FT.	329	3360 SQ.FT.	379	3360 SQ.FT.	429	3600 SQ.FT.
230	3360 SQ.FT.	280	4690 SQ.FT.	330	3360 SQ.FT.	380	3360 SQ.FT.	430	5033 SQ.FT.
231	3360 SQ.FT.	281	4690 SQ.FT.	331	3360 SQ.FT.	381	3360 SQ.FT.	431	3207 SQ.FT.
232	3360 SQ.FT.	282	5900 SQ.FT.	332	3360 SQ.FT.	382	3360 SQ.FT.	432	2725 SQ.FT.
233	4270 SQ.FT.	283	5900 SQ.FT.	333	4068 SQ.FT.	383	4200 SQ.FT.	433	2725 SQ.FT.
234	4248 SQ.FT.	284	4690 SQ.FT.	334	4068 SQ.FT.	384	4200 SQ.FT.	434	3535 SQ.FT.
235	4248 SQ.FT.	285	4690 SQ.FT.	335	3360 SQ.FT.	385	4223 SQ.FT.	435	3535 SQ.FT.
236	4248 SQ.FT.	286	4690 SQ.FT.	336	3360 SQ.FT.	386	4200 SQ.FT.	436	2725 SQ.FT.
237	4248 SQ.FT.	287	7140 SQ.FT.	337	3360 SQ.FT.	387	3360 SQ.FT.	437	2725 SQ.FT.
238	8145 SQ.FT.	288	7105 SQ.FT.	338	3360 SQ.FT.	388	3360 SQ.FT.	438	3207 SQ.FT.
239	4690 SQ.FT.	289	4690 SQ.FT.	339	4200 SQ.FT.	389	3360 SQ.FT.	439	3207 SQ.FT.
240	4690 SQ.FT.	290	4690 SQ.FT.	340	4200 SQ.FT.	390	4068 SQ.FT.	440	2725 SQ.FT.
241	4690 SQ.FT.	291	4690 SQ.FT.	341	3360 SQ.FT.	391	4468 SQ.FT.	441	2725 SQ.FT.
242	5900 SQ.FT.	292	5900 SQ.FT.	342	4200 SQ.FT.	392	3600 SQ.FT.	442	3535 SQ.FT.
243	5900 SQ.FT.	293	5900 SQ.FT.	343	4200 SQ.FT.	393	3600 SQ.FT.	443	3535 SQ.FT.
244	4690 SQ.FT.	294	4690 SQ.FT.	344	4200 SQ.FT.	394	4068 SQ.FT.	444	2725 SQ.FT.
245	4690 SQ.FT.	295	4690 SQ.FT.	345	4202 SQ.FT.	395	3361 SQ.FT.	445	2725 SQ.FT.
246	4690 SQ.FT.	296	4690 SQ.FT.	346	4200 SQ.FT.	396	2725 SQ.FT.	446	3207 SQ.FT.
247	7140 SQ.FT.	297	7140 SQ.FT.	347	4200 SQ.FT.	397	2725 SQ.FT.	447	3207 SQ.FT.
248	7105 SQ.FT.	298	4180 SQ.FT.	348	4200 SQ.FT.	398	3207 SQ.FT.	448	3207 SQ.FT.

Parcel #	Area								
449	4737 SQ.FT.	499	4191 SQ.FT.	549	3360 SQ.FT.	599	4200 SQ.FT.	649	4200 SQ.FT.
450	3960 SQ.FT.	500	4191 SQ.FT.	550	4013 SQ.FT.	600	4189 SQ.FT.	650	4189 SQ.FT.
451	3960 SQ.FT.	501	3353 SQ.FT.	551	5129 SQ.FT.	601	4875 SQ.FT.	651	4875 SQ.FT.
452	3960 SQ.FT.	502	3353 SQ.FT.	552	3600 SQ.FT.	602	5032 SQ.FT.	652	5032 SQ.FT.
453	3960 SQ.FT.	503	3353 SQ.FT.	553	3600 SQ.FT.	603	3600 SQ.FT.	653	3600 SQ.FT.
454	3960 SQ.FT.	504	4191 SQ.FT.	554	4191 SQ.FT.	604	3600 SQ.FT.	654	3600 SQ.FT.
455	4690 SQ.FT.	505	5032 SQ.FT.	555	3600 SQ.FT.	605	3600 SQ.FT.	655	3600 SQ.FT.
456	4690 SQ.FT.	506	3600 SQ.FT.	556	5216 SQ.FT.	606	3600 SQ.FT.	656	3600 SQ.FT.
457	3960 SQ.FT.	507	3600 SQ.FT.	557	4013 SQ.FT.	607	5032 SQ.FT.	657	5032 SQ.FT.
458	3960 SQ.FT.	508	3600 SQ.FT.	558	3360 SQ.FT.	608	3360 SQ.FT.	658	3360 SQ.FT.
459	3960 SQ.FT.	509	3600 SQ.FT.	559	3360 SQ.FT.	609	4200 SQ.FT.	659	4200 SQ.FT.
460	6637 SQ.FT.	510	5032 SQ.FT.	560	4200 SQ.FT.	610	4200 SQ.FT.	660	4200 SQ.FT.
461	4278 SQ.FT.	511	3297 SQ.FT.	561	4200 SQ.FT.	611	3297 SQ.FT.	661	4200 SQ.FT.
462	3360 SQ.FT.	512	2725 SQ.FT.	562	3360 SQ.FT.	612	3360 SQ.FT.	662	3360 SQ.FT.
463	3360 SQ.FT.	513	2725 SQ.FT.	563	3360 SQ.FT.	613	3360 SQ.FT.	663	3360 SQ.FT.
464	3360 SQ.FT.	514	3525 SQ.FT.	564	4715 SQ.FT.	614	4715 SQ.FT.	664	4715 SQ.FT.
465	4200 SQ.FT.	515	3525 SQ.FT.	565	4232 SQ.FT.	615	4232 SQ.FT.	665	4232 SQ.FT.
466	4200 SQ.FT.	516	2725 SQ.FT.	566	3600 SQ.FT.	616	3600 SQ.FT.	666	3600 SQ.FT.
467	3360 SQ.FT.	517	2725 SQ.FT.	567	3600 SQ.FT.	617	3600 SQ.FT.	667	3600 SQ.FT.
468	3360 SQ.FT.	518	3297 SQ.FT.	568	3600 SQ.FT.	618	3600 SQ.FT.	668	3600 SQ.FT.
469	3360 SQ.FT.	519	4153 SQ.FT.	569	3600 SQ.FT.	619	3600 SQ.FT.	669	3600 SQ.FT.
470	4200 SQ.FT.	520	3360 SQ.FT.	570	5032 SQ.FT.	620	5032 SQ.FT.	670	5032 SQ.FT.
471	3391 SQ.FT.	521	3360 SQ.FT.	571	4191 SQ.FT.	621	4191 SQ.FT.	671	4191 SQ.FT.
472	2725 SQ.FT.	522	4197 SQ.FT.	572	3353 SQ.FT.	622	3353 SQ.FT.	672	3353 SQ.FT.
473	2725 SQ.FT.	523	4120 SQ.FT.	573	3353 SQ.FT.	623	3353 SQ.FT.	673	3353 SQ.FT.
474	3295 SQ.FT.	524	3360 SQ.FT.	574	3353 SQ.FT.	624	3353 SQ.FT.	674	3353 SQ.FT.
475	3295 SQ.FT.	525	3360 SQ.FT.	575	4191 SQ.FT.	625	4191 SQ.FT.	675	4191 SQ.FT.
476	2725 SQ.FT.	526	3979 SQ.FT.	576	4191 SQ.FT.	626	4191 SQ.FT.	676	4191 SQ.FT.
477	2725 SQ.FT.	527	3597 SQ.FT.	577	3353 SQ.FT.	627	3353 SQ.FT.	677	3353 SQ.FT.
478	3391 SQ.FT.	528	2725 SQ.FT.	578	3353 SQ.FT.	628	3353 SQ.FT.	678	3353 SQ.FT.
479	4200 SQ.FT.	529	2725 SQ.FT.	579	3353 SQ.FT.	629	3353 SQ.FT.	679	3353 SQ.FT.
480	3360 SQ.FT.	530	3353 SQ.FT.	580	4191 SQ.FT.	630	4191 SQ.FT.	680	4191 SQ.FT.
481	3360 SQ.FT.	531	3353 SQ.FT.	581	3353 SQ.FT.	631	3353 SQ.FT.	681	3353 SQ.FT.
482	3360 SQ.FT.	532	2725 SQ.FT.	582	3353 SQ.FT.	632	3353 SQ.FT.	682	3353 SQ.FT.
483	4200 SQ.FT.	533	2725 SQ.FT.	583	3353 SQ.FT.	633	3353 SQ.FT.	683	3353 SQ.FT.
484	4200 SQ.FT.	534	3297 SQ.FT.	584	3353 SQ.FT.	634	3353 SQ.FT.	684	3353 SQ.FT.
485	3360 SQ.FT.	535	3391 SQ.FT.	585	4240 SQ.FT.	635	4240 SQ.FT.	685	4240 SQ.FT.
486	3360 SQ.FT.	536	2725 SQ.FT.	586	4240 SQ.FT.	636	4240 SQ.FT.	686	4240 SQ.FT.
487	3360 SQ.FT.	537	2725 SQ.FT.	587	3392 SQ.FT.	637	3392 SQ.FT.	687	3392 SQ.FT.
488	4218 SQ.FT.	538	3212 SQ.FT.	588	3212 SQ.FT.	638	3212 SQ.FT.	688	3212 SQ.FT.
489	3360 SQ.FT.	539	3212 SQ.FT.	589	4068 SQ.FT.	639	4068 SQ.FT.	689	4068 SQ.FT.
490	3360 SQ.FT.	540	2725 SQ.FT.	590	4068 SQ.FT.	640	4068 SQ.FT.	690	4068 SQ.FT.
491	3360 SQ.FT.	541	2725 SQ.FT.	591	4068 SQ.FT.	641	4068 SQ.FT.	691	4068 SQ.FT.
492	3360 SQ.FT.	542	1371 SQ.FT.	592	4068 SQ.FT.	642	4068 SQ.FT.	692	4068 SQ.FT.
493	3360 SQ.FT.	543	4311 SQ.FT.	593	4068 SQ.FT.	643	4068 SQ.FT.	693	4068 SQ.FT.
494	4203 SQ.FT.	544	3360 SQ.FT.	594	4068 SQ.FT.	644	4068 SQ.FT.	694	4068 SQ.FT.
495	4203 SQ.FT.	545	3360 SQ.FT.	595	4068 SQ.FT.	645	4068 SQ.FT.	695	4068 SQ.FT.
496	4203 SQ.FT.	546	4300 SQ.FT.	596	4068 SQ.FT.	646	4068 SQ.FT.	696	4068 SQ.FT.
497	3353 SQ.FT.	547	4300 SQ.FT.	597	4300 SQ.FT.	647	4300 SQ.FT.	697	4300 SQ.FT.
498	3353 SQ.FT.	548	3360 SQ.FT.	598	4300 SQ.FT.	648	4300 SQ.FT.	698	4300 SQ.FT.

Parcel #	Area								
699	4200 SQ.FT.	749	4200 SQ.FT.	799	4200 SQ.FT.	849	4200 SQ.FT.	899	4200 SQ.FT.
700	4200 SQ.FT.	750	4200 SQ.FT.	800	4200 SQ.FT.	850	4200 SQ.FT.	900	4200 SQ.FT.
701	4200 SQ.FT.	751	4200 SQ.FT.	801	4200 SQ.FT.	851	4200 SQ.FT.	901	4200 SQ.FT.
702	4200 SQ.FT.	752	4200 SQ.FT.	802	4200 SQ.FT.	852	4200 SQ.FT.	902	4200 SQ.FT.
703	4200 SQ.FT.	753	4200 SQ.FT.	803	4200 SQ.FT.	853	4200 SQ.FT.	903	4200 SQ.FT.
704	4200 SQ.FT.	754	4200 SQ.FT.	804	4200 SQ.FT.	854	4200 SQ.FT.	904	4200 SQ.FT.
705	4200 SQ.FT.	755	4200 SQ.FT.	805	4200 SQ.FT.	855	4200 SQ.FT.	905	4200 SQ.FT.
706	4200 SQ.FT.	756	4200 SQ.FT.	806	4200 SQ.FT.	856	4200 SQ.FT.	906	4200 SQ.FT.
707	4200 SQ.FT.	757	4200 SQ.FT.	807	4200 SQ.FT.	857	4200 SQ.FT.	907	4200 SQ.FT.
708	4200 SQ.FT.	758	4200 SQ.FT.	808	4200 SQ.FT.	858	4200 SQ.FT.	908	4200 SQ.FT.
709	4200 SQ.FT.	759	4200 SQ.FT.	809	4200 SQ.FT.	859	4200 SQ.FT.	909	4200 SQ.FT.
710	4200 SQ.FT.	760	4200 SQ.FT.	810	4200 SQ.FT.	860	4200 SQ.FT.	910	4200 SQ.FT.
711	4200 SQ.FT.	761	4200 SQ.FT.	811	4200 SQ.FT.	861	4200 SQ.FT.	911	4200 SQ.FT.
712	4200 SQ.FT.	762							



OVERALL SITE PLAN



PSN	DRIV	CHKD
SRH	DO	DMW
SCALE: 1" = 250'		
JOB No. 0671		
DATE: 27 Apr 07		
FILE No. 0671.sp.0		
Sheet 2 of 12		

Douglas M. Warner, PE
DE PE 11958

ELEMENT
 18335 coastal highway suite C
 Lewes, de 19958
 p.302.645.0777
 f.302.645.0177
 info@elementdg.com

**TENTATIVE PLOT PLAN
SHOWFIELD**
 TAX MAP #: 335-8.00-46.00,47.00,48.00,49.01,51.00,
 52.00,53.00, 53.01,53.02;335-8.15-42.00
 CITY OF LEWES
 LEWES AND REHOBOTH HUNDRED
 SUSSEX COUNTY, DELAWARE

PLAN STATUS			
REV.	DATE	CHANGE	BY