



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

April 13, 2006

Mr. Randy Duplechain  
Davis, Bowen & Friedel  
23 N. Walnut Street  
Milford, DE 19963

RE: PLUS review – PLUS 2006-03-06; Aventuris Property

Dear Mr. Duplechain:

Thank you for meeting with State agency planners on March 22, 2006 to discuss the proposed plans for the Aventuris property project to be located on the north side of Lewes Drive, northeast of Dover.

According to the information received, you are seeking site plan approval for 152 residential unit on 152.22 acres located in Level 4 according to the Strategies for State Policies and Spending. The property is outside the Growth Zone according to the Kent County Comprehensive Plan. **The comments in this letter are technical, and are not intended to suggest that the State supports this development proposal. This letter does not in any way suggest or imply that you may receive or may be entitled to permits or other approvals necessary to construct the development you indicate or any subdivision thereof on these lands.**

Please note that changes to the plan, other than those suggested in this letter, could result in additional comments from the State. Additionally, these comments reflect only issues that are the responsibility of the agencies represented at the meeting. The developers will also need to comply with any Federal, State and local regulations regarding this property. We also note that as Kent County is the governing authority over this land, the developers will need to comply with any and all regulations/restrictions set forth by the County.

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

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

This project represents a major land development that will result in 152 residential units in an Investment Level 4 area according to the *Strategies for State Policies and Spending*. This project is also located outside the Growth Zone according to Kent County's certified comprehensive plan. Investment Level 4 indicates where State investments will support agricultural preservation, natural resource protection, and the continuation of the rural nature of these areas. New development activities and suburban development are not supported in Investment Level 4. These areas are comprised of prime agricultural lands and environmentally sensitive wetlands and wildlife habitats, which should be, and in many cases have been preserved.

From a fiscal responsibility perspective, development of this site is likewise inappropriate. The cost of providing services to development in rural areas is an inefficient and wasteful use of the State's fiscal resources. The project as proposed is likely to bring more than 395 new residents to an area where the State has no plans to invest in infrastructure upgrades or additional services. These residents will need access to such services and infrastructure as schools, police, and transportation. To provide some examples, the State government funds 100 percent of school transportation and paratransit services, up to 80% of school construction costs, and the cost of police protection in the unincorporated portion of Kent County where this development is proposed. Over the longer term, the unseen negative ramifications of this development will become even more evident as the community matures and the cost of maintaining infrastructure and providing services increases.

The project's location East of State Route 1 is of particular concern. It is the State's policy to discourage new growth East of State Route 1. Starting with the historic Coastal Zone Act, State actions have encouraged natural resource and agricultural preservation rather than growth and development in this area of Kent County. Tens of millions of dollars have been spent by the State and Federal governments and by private conservation organizations to protect and preserve the natural environment and sustain a vibrant agricultural area that occupies some of the best farmland in the State. State investments East of Route 1 will be made for these purposes. No investment in infrastructure which supports growth is expected.

Finally, we must note our continued opposition to the extension of the Kent County sewer district to this site for the following reasons:

- 1) The proposed development project will be connected to the sewer infrastructure which was constructed using State funds as part of the Northeast Sanitary Sewer District which serves the Town of Leipsic. The Northeast Sanitary Sewer District is a State funded, County operated sewer district. The project was funded with 21<sup>st</sup> Century Fund grants and loans for the sole purpose of mitigating existing environmental impacts associated with failing septic systems in the rural community of Leipsic. Selected additional failing or marginal septic systems were also connected when the project was constructed. In accordance with the State *Strategies for Policies and Spending*, the funding was made available upon the condition that the infrastructure was not to be used for new growth. The connection of this project to this State funded sewer infrastructure for the purpose of constructing a new subdivision would be a violation of the grant criteria. It also represents a violation of the agreement between the State and the County that led to the funding of this sewer infrastructure.
- 2) The sewer infrastructure was designed with limited capacity because it was not to be used for new growth, and also to discourage the temptation for other properties to seek access to it. It is our understanding that there is a limited amount of additional capacity in this sewer line. This additional capacity was intended to allow vacant and underutilized parcels in the Town of Leipsic to connect to sewer service in the future. The connection of this new development project could be at the expense of existing property owners in Leipsic who have been led to believe there is adequate capacity available in the system for vacant lands in town. Any reduction in capacity available to Leipsic could have a negative effect on the Town's opportunities for revitalization and economic development.
- 3) The expansion of sewer service east of State Route 1 is contrary to the State's policy of limiting infrastructure investment and new growth east of Route 1, and in violation of the Memorandum of Understanding between Kent County, the City of Dover, and the State of Delaware dated April 13, 1999 which indicates that the County will not extend sewer east of Route 1 unless the County, State, and/or City plans are amended. As noted above, the parcel in question is located in Investment Level 4 in the *State Strategies* and is currently outside of Kent County's Growth Overlay Zone.

Because the development is inconsistent with the *Strategies for State Policies and Spending*, is east of State Route 1, and accesses State funded sewer infrastructure not intended for new growth the State is opposed to this proposed subdivision.

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

The Division of Historical and Cultural Affairs is not in favor of this development in Level 4, because it will lead to the further destruction of the historic agricultural landscape in this area, the historic agricultural complex (K-2070) within the parcel, and a known prehistoric-period archaeological site (K-6384), also within the parcel. There is another historic agricultural complex (K-2067) to the north that will be adversely affected by the loss of setting and the introduction of noise and visual effects.

If this development proceeds, the DHCA would like the opportunity to document the existing buildings prior to any demolition activities, and to examine the archaeological site to learn something more about its extent and nature prior to any ground-disturbing activities. They also recommend that the developer include sufficient landscaping to mitigate the adverse visual and noise effects on the agricultural complex to the north.

**Department of Transportation – Contact: Bill Brockenbrough 760-2109**

Aventuris Properties, LLC seeks to develop 152 single-family detached houses on an approximately 152.22-acre parcel (Tax Parcel LC-00-047.00-01-081.00-000). The subject land is located northeast of Dover, and more specifically on the north side of Lewis Drive (Kent Road 332) just west of Leipsic Road (Kent Road 88). The land is zoned AR in Kent County and it would be developed by right.

This development is proposed for an area designated as Level 4 under the *Strategies for State Policies and Spending*. The *Strategies for State Policies and Spending* has deemed the type of development being proposed inappropriate for this area. As part of our commitment to support the *Strategies*, DelDOT refrains from participating in the cost of any road improvements needed to support this development and is opposed to any road improvements that will substantially increase the transportation system capacity in this area. DelDOT will only support taking the steps necessary to preserve the existing transportation infrastructure and make whatever safety and drainage related improvements are deemed appropriate and necessary. The intent is to preserve the open space, agricultural lands, natural habitats and forestlands that are typically found in Level 4 Areas while avoiding the creation of isolated development areas that cannot be served effectively or efficiently by public transportation, emergency responders, and other public services.

DelDOT strongly supports new development in and around existing towns and municipalities and in areas designated as growth zones in approved Comprehensive Plans. We encourage the use of transfer of development rights where this growth management tool is available.

If this development proposal is approved, notwithstanding inconsistencies with the relevant plans and policies, DeIDOT will provide technical review and comments.

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

#### **Investment Level 4 Policy Statement**

This project is proposed for an Investment Level 4 area as defined by the *Strategies for State Policies and Spending* and is also located outside of a designated growth area in the relevant municipal and county certified comprehensive plans. According to the *Strategies* this project is inappropriate in this location. In Investment Level 4 areas, the State's investments and policies, from DNREC's perspective, should retain the rural landscape and preserve open spaces and farmlands. Open space investments should emphasize the protection of critical natural habitat and wildlife to support a diversity of species, and the protection of present and future water supplies. Open space investments should also provide for recreational activities, while helping to define growth areas. Additional state investments in water and wastewater systems should be limited to existing or imminent public health, safety or environmental risks only, with little provision for additional capacity to accommodate further development.

With continued development in Investment Level 4 areas, the State will have a difficult, if not impossible, time attaining water quality (e.g., TMDLs) and air quality (e.g., non-attainment areas for ozone and fine particulates) goals. Present and future investments in green infrastructure, as defined in Governor Minner's Executive Order No. 61, will be threatened. DNREC strongly supports new development in and around existing towns and municipalities and in areas designated as growth zones in certified Comprehensive Plans. They encourage the use of transfer of development rights where this growth management tool is available.

This particular development certainly compromises the integrity of the State Strategies and the preservation goals inherent in many of DNREC's programs. Of particular concern are: potential impacts to wetlands, the increase in impervious cover, and known drainage concerns. While mitigating measures such as conservation design, central wastewater systems instead of individual on-site septic systems, and other best management practices may help mitigate impacts from this project, not doing the project at all is the best avenue for avoiding negative impacts. As such, this project will receive no financial, technical or other support of any kind from DNREC. Any required permits or other authorizations for this project shall be considered in light of the project's conflict with our State growth strategies.

## **Soils**

According to the Sussex County soil survey Sassafras, Woodstown, Klej, Fallsington, and Othello were mapped on subject parcel. Sassafras is a well-drained upland soil that, generally, has few limitations for development. Woodstown and Klej are moderately well-drained soils of low-lying uplands that have moderate limitations for development. Fallsington and Othello are poorly-drained wetland associated (hydric) soils that have severe limitations for development.

It should also be noted that a majority of the soils on this parcel are likely to have a seasonal high water table within one-foot of the soil surface. Building in such soils is likely to leave prospective residents of this and adjoining properties susceptible to future flooding problems from groundwater-driven surface water ponding, especially during extended periods of high-intensity rainfall events such as tropical storms/hurricanes or “nor’easters.” This is in addition to increased flooding likely from surface water runoff emanating from future created forms of structural imperviousness (roof tops, roads, and sidewalks).

## **Wetlands**

Statewide Wetland Mapping Project (SWMP) maps indicate the presence of palustrine wetlands on this parcel.

These wetlands provide water quality benefits, attenuate flooding and provide important habitat for plants and wildlife. A 100-foot vegetated buffer should be implemented from the edge of the wetland complex. 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.

It is also recommended that the Farm Services Agency of the USDA be contacted to assess whether the farmed wetlands on subject parcel meet the recognized criteria for classification as “prior converted wetlands.” Prior converted wetlands are farmed wetlands that have drained or altered before December 23, 1985, and no longer meet the wetland criteria established under the 404 program. Such wetlands are considered exempt from regulatory protection provided that there is no proof of a continuous “fallow period” of five years or greater in that parcel’s cropping history. Parcels converted after said date regardless of cropping history are considered jurisdictional by the Army Corps of Engineers (ACOE). The contact person for assessing a parcel’s cropping history is Sally Griffin at the USDA; she can be reached at 678-4182.

## **Wetland Regulations**

PLUS application materials indicate that wetlands have been delineated (presumably a field delineation). This delineation should be verified by the Army Corps of Engineers through the Jurisdictional Determination process. Please note that 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. A State of Delaware Subaqueous Lands Jurisdictional Determination should also be conducted.

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

To find out more about permitting requirements, the applicant is encouraged to attend a Joint Permit Process Meeting. These meetings are held monthly and are attended by federal and state resource agencies responsible for wetland permitting. Contact Denise Rawding at (302) 739-9943 to schedule a meeting.

## **Impervious Cover**

Research has consistently shown that once a watershed exceeds a threshold of 10 percent imperviousness, water and habitat quality irreversibly decline below their predevelopment level. Based on information compiled by the University of Delaware through analysis of 2002 aerial photography, the Leipsic River watershed has about 5.1 percent impervious cover. Since the amount of imperviousness generated by this project will likely be well over this 10 percent watershed threshold, the applicant is strongly advised to pursue best management practices (BMPs) that mitigate or reduce some of its predictable impacts. Moreover, increases in a watershed's surface imperviousness have been shown to reflect proportional decreases in water and habitat quality when this threshold is exceeded. Reducing the amount of surface imperviousness through the use of pervious paving materials ("pervious pavers") in lieu of asphalt or concrete in conjunction with additional native tree and shrub plantings are examples of practical BMPs that could easily be implemented to reduce surface imperviousness.

Based on a review of the submitted PLUS application, the applicant projects that less than 30% of this parcel will be rendered impervious following this parcel's development. However, given the scope and density of this project, this figure is obviously a

significant underestimate. The applicant should be made aware that all forms of constructed surface imperviousness (i.e., rooftops, sidewalks and roads) should be included in the impervious surface calculation; otherwise, an inaccurate assessment of this project's actual environmental impacts will be made. It is strongly advised, therefore, that the applicant recalculate this project's surface imperviousness using the aforementioned considerations.

### **TMDLs**

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. Compliance with TMDL nutrient loading reduction requirements will ultimately be assessed via nutrient budget protocol, a computer-based model that quantifies post-development nutrient loading under a variety of land use scenarios in combination with a variety (or absence) of BMP types and intensities. This post-development loading rate is then compared with the pre-development loading rate as a means to assess whether the project meets the acceptable TMDL reduction levels. Since impervious cover is an important variable for assessing the environmental impacts from nutrient runoff, the applicant, as mentioned previously, should attempt to recalculate it more comprehensively. All forms of created surface imperviousness (rooftops, sidewalks, and roads) should be considered when calculating surface imperviousness, otherwise; the nutrient budget protocol will not reflect the project's true environmental impacts. Although TMDLs have not yet been finalized for the Leipsic River watershed to date, the applicant should be made aware that they will be available in the near future (before December 2006), and may be applicable to this project given the large backlog of developments pending County review. It is strongly advised, therefore, that the applicant be proactive and employ best management practices (BMPs) and Best Available Technologies (BATs) as methodological mitigative strategies to reduce the likely degradative impacts associated with this development. Examples of BMPs or BATs that should be used to significantly reduce nutrient loading from this project include practices that prevent or mitigate or minimize created surface imperviousness, maintenance of recommended wetland buffer widths, and use of innovative "green-technology" stormwater methodologies rather than conventional open-water stormwater management structures. We suggest that the applicant periodically contact the Watershed Assessment office regarding the status of the nutrient budget protocol and obtain it as soon as possible. When it becomes available, we suggest that the applicant then verify their project's compliance with the specified TMDL loading rates by running the model themselves. The contact person for obtaining the protocol is Lyle Jones at 739-9939.

## **Water Supply**

The project information sheets state water will be provided to the project by Tidewater Utilities via a central water system. Our records indicate that the project is located within the public water service area granted to Tidewater Utilities under Certificate of Public Convenience and Necessity PSC-1190.

Should dewatering points be needed during any phase of construction, a dewatering well construction permit must be obtained from the Water Supply Section prior to construction of the well points. In addition, a water allocation permit will be needed if the pumping rate will exceed 50,000 gallons per day at any time during operation.

All well permit applications must be prepared and signed by licensed water well contractors, and only licensed well drillers may construct the wells. Please factor in the necessary time for processing the well permit applications into the construction schedule. Dewatering well permit applications typically take approximately four weeks to process, which allows the necessary time for technical review and advertising.

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

## **Sediment and Erosion Control/Stormwater Management**

1. Land disturbing activities in excess of 5,000 square feet are regulated under the Delaware Sediment and Stormwater Regulations. A detailed sediment and stormwater management plan must be reviewed and approved by the Kent Conservation District prior to any land disturbing activity (i.e. clearing, grubbing, filling, grading, etc.) taking place. The review fee and a completed Application for a Detailed Plan are due at the time of plan submittal to the Kent Conservation District. Construction inspection fees based on developed area and stormwater facility maintenance inspection fees based on the number of stormwater facilities are due prior to the start of construction. Please refer to the fee schedule for those amounts.
2. The following notes must appear on the record plan:
  - The Kent Conservation District reserves the right to enter private property for purposes of periodic site inspection.
  - The Kent Conservation District reserves the right to add, modify, or delete any erosion or sediment control measure, as it deems necessary.

- A clear statement of defined maintenance responsibility for stormwater management facilities must be provided on the Record Plan.
3. Ease of maintenance must be considered as a site design component and a maintenance set aside area for disposal of sediments removed from the basins during the course of regular maintenance must be shown on the Record Plan for the subdivision.
  4. All drainage ways and storm drains should be contained within drainage easements and clearly shown on the plan to be recorded by Kent County.
  5. 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. There are known restrictions down stream of the site, the engineer is encouraged to take care in designing ponds that are out falling to a down stream culverts. A down stream culvert analysis may be required before site approval is granted.
2. 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.
3. 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.
4. A letter of no objection to re-recording will be provided once the detailed Sediment and Stormwater Management plan has been re-approved.
5. Proper drainage of developed lots and active open space should be considered in the development of the grading plan for this subdivision.
6. Based on the site characteristics, a pre-application meeting is suggested to discuss stormwater management and drainage for this site.

## **Drainage**

The Drainage Program is aware of existing drainage concerns in the area. There are existing drainage concerns with the outlet for the western portion of this project. The area of concern extends from the northern property boundary of this project to the north side of Dyke Branch Road and thru the proposed Millwood Crossing Subdivision (PLUS 2005-01-10). The Drainage Program requests that 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 into the Dyke Branch drainage system. The Drainage Program requests that the engineer check existing downstream ditches and pipes for function and blockages prior to the start of construction.

The Drainage Program requests that 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 into the Muddy Branch drainage system. The Drainage Program requests that the engineer check existing downstream ditches and pipes for function and blockages prior to the start of construction.

The engineer is encouraged to meet with downstream landowners to obtain their concerns of current drainage as well as the additional drainage impact this project will have on the area. Please notify downstream landowners if there will be a change in the volume of water released on them.

The Drainage Program requests that all storm drains and catch basins for this project be on open space, within street right-of-ways. However, the Drainage Program recognizes the need for catch basins in rear yards in certain cases. Therefore, catch basins placed in rear yards will need to be clear of obstructions and be accessible for maintenance. Decks, sheds, fences, and kennels can hinder drainage patterns as well as future maintenance to the storm drain or catch basin. Deed restrictions, along with drainage easements recorded on deeds, should ensure adequate future maintenance access. Drainage easements for storm drains and catch basins should be 15 feet on each side of the pipe or catch basin.

### Site recommendation:

Improve water quality and reduce open space maintenance by planting a buffer of trees, shrubs, grasses, and sedges along all drainage ditches and wetlands. Existing buffers could be enhanced or new buffers planted to obtain 50-foot buffers on each side of the existing drainage ditches. A minimum 25-foot tree and shrub planting on buffers with the tallest trees planted on the south and west side of the drainage ditches will maximize

shading of water. Trees and shrubs should be native species, spaced to allow for mechanized drainage maintenance at maturity. Tree and shrub planting in this manner will provide a shading effect promoting water quality while allowing future drainage maintenance. Do not plant trees closer than 5 feet of the top of the ditch to avoid future blockages from tree roots. Plant the balance of the 50-foot buffer, as well as the ditch banks, with herbaceous vegetation to aid in the reduction of sediment and nutrients entering into Dyke Branch and Muddy Branch. Grasses, forbs and sedges planted within these buffers should be native species, selected for their height, ease of maintenance, erosion control, and nutrient uptake capabilities.

### **Open Space**

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

DNREC encourages the developer to place open space containing forest and/or wetlands into a permanent conservation easement or other permanent protection mechanism. Conservation areas should also be demarked to avoid infringement by homeowners.

### **Forested Wetlands**

DNREC recommends that the applicant consider leaving a larger upland buffer around the existing forested wetlands. The application states that only 25-foot wetland buffers are going to be used and this is inadequate for the protection of water quality within the wetlands. In addition, forested wetlands can support an array of plant and animal species, some of which rely on upland buffers surrounding the wetland for breeding (i.e. salamanders). We recommend that the site plan be changed and at least a 100-foot forested upland buffer be left intact around the wetlands in the north western portion of the property. This would entail the removal of a stormwater management pond that is too close to wetland boundaries. Roughly, lot numbers 61-75 and possibly lots 76-79, 85-90 (and associated roadways) are also located too close to the wetlands and should be omitted from the site plan.

In addition, the application states that wetlands and the stream are going to be used as a stormwater outlet (question #32). Stormwater can contain excess nutrients and basically any chemical a resident uses on their lawn or paved area and should not be permitted to empty into any wetland or stream system.

### **Nuisance Geese**

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 a reduction in the number of ponds, proper landscaping, monitoring, and other techniques, geese problems can be minimized.

### **Solid Waste**

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

### **Underground Storage Tanks**

There is one inactive LUST site(s) located near the proposed project:

Kentwood Mobil Homes, Facility # 1-000536, Project # K9409226

No environmental impact is expected from the above inactive/active LUST site(s). However, should any underground storage tank or petroleum contaminated soil be discovered during construction, the Tank Management Branch must be notified as soon as possible. It is not anticipated that any construction specifications would need to be changed due to petroleum contamination. However, should any unanticipated

contamination be encountered and PVC pipe is being utilized, it will need to be changed to ductile steel with nitrile rubber gaskets in the contaminated areas.

### **Air Quality**

Once complete, vehicle emissions associated with this project are estimated to be 11.7 tons (23,330.4 pounds) per year of VOC (volatile organic compounds), 9.7 tons (19,316.0 pounds) per year of NO<sub>x</sub> (nitrogen oxides), 7.1 tons (14,251.7 pounds) per year of SO<sub>2</sub> (sulfur dioxide), 0.6 ton (1,268.6 pounds) per year of fine particulates and 975.8 tons (1,951,559.4 pounds) per year of CO<sub>2</sub> (carbon dioxide).

***However, because this project is in a level 4 area, mobile emission calculations should be increased by 118 pounds for VOC emissions for each mile outside the designated growth areas per household unit; by 154 pounds for NO<sub>x</sub>; and by 2 pounds for particulate emissions. A typical development of 100 units that is planned 10 miles outside the growth areas will have additional 59 tons per year of VOC emissions, 77 tons per year of NO<sub>x</sub> emissions and 1 ton per year of particulate emissions versus the same development built in a growth area (level 1,2 or 3).***

Emissions from area sources associated with this project are estimated to be 4.7 tons (9,410.2 pounds) per year of VOC (volatile organic compounds), 0.5 ton (1,035.4 pounds) per year of NO<sub>x</sub> (nitrogen oxides), 0.4 ton (859.2 pounds) per year of SO<sub>2</sub> (sulfur dioxide), 0.6 ton (1,108.8 pounds) per year of fine particulates and 19.1 tons (38,146.9 pounds) per year of CO<sub>2</sub> (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 1.9 tons (3,729.5 pounds) per year of NO<sub>x</sub> (nitrogen oxides), 6.5 tons (12,972.3 pounds) per year of SO<sub>2</sub> (sulfur dioxide) and 956.7 tons (1,913,412.5 pounds) per year of CO<sub>2</sub> (carbon dioxide).

	VOC	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
Mobile	11.7	9.7	7.1	0.6	975.8
Residential	4.7	0.5	0.4	0.6	19.1
Electrical Power		1.9	6.5		956.7
<b>TOTAL</b>	<b>16.4</b>	<b>12.1</b>	<b>14.0</b>	<b>1.2</b>	<b>1951.6</b>

For this project the electrical usage via electric power plant generation alone totaled to produce an additional 1.9 tons of nitrogen oxides per year and 6.5 tons of sulfur dioxide per year.

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

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

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

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

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

**State Fire Marshal’s Office – Contact: John 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:**
  - Where a water distribution system is proposed for single-family dwellings it shall be capable of delivering at least 500 gpm for 1-hour duration, at 20-psi residual pressure. Fire hydrants with 1000 feet spacing on centers are required.

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

b. **Accessibility:**

- All premises, which the fire department may be called upon to protect in case of fire, and which are not readily accessible from public roads, shall be provided with suitable gates and access roads, and fire lanes so that all buildings on the premises are accessible to fire apparatus. This means that the access road to the subdivision from Lewis Drive must be constructed so fire department apparatus may negotiate it.
- Fire department access shall be provided in such a manner so that fire apparatus will be able to locate within 100 ft. of the front door.
- Any dead end road more than 300 feet in length shall be provided with a turn-around or cul-de-sac arranged such that fire apparatus will be able to turn around by making not more than one backing maneuver. The minimum paved radius of the cul-de-sac shall be 38 feet. The dimensions of the cul-de-sac or turn-around shall be shown on the final plans. Also, please be advised that parking is prohibited in the cul-de-sac or turn around.
- The use of speed bumps or other methods of traffic speed reduction must be in accordance with Department of Transportation requirements.
- The local Fire Chief, prior to any submission to our Agency, shall approve in writing the use of gates that limit fire department access into and out of the development or property.

c. **Gas Piping and System Information:**

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

d. **Required Notes:**

- Provide a note on the final plans submitted for review to read “ All fire lanes, fire hydrants, and fire department connections shall be marked in accordance with the Delaware State Fire Prevention Regulations”
- Name of Water Supplier
- Proposed Use
- National Fire Protection Association (NFPA) Construction Type
- Maximum Height of Buildings (including number of stories)
- Provide Road Names, even for County Roads

Preliminary meetings with fire protection specialists are encouraged prior to formal submittal. Please call for appointment. Applications and brochures can be downloaded from our website: [www.delawarestatefiremarshal.com](http://www.delawarestatefiremarshal.com), technical services link, plan review, applications or brochures.

**Department of Agriculture - Contact: Milton Melendez 698-4500**

The proposed development is in an area designated as Level 4 under the *Strategies for State Policies and Spending*. The *Strategies* and the Kent County Comprehensive Plan do not support this type of isolated development in this area. The intent of these plans is to preserve the agricultural lands, forestlands, recreational uses, and open spaces that are preferred uses in Level 4 areas. The Department of Agriculture opposes the proposed development which conflicts with the preferred land uses, making it more difficult for agriculture and forestry to succeed, and increases the cost to the public for services and facilities.

More importantly, the Department of Agriculture opposes this project because it negatively impacts those land uses that are the backbone of Delaware's resource industries - agriculture, forestry, horticulture - and the related industries they support. Often new residents of developments like this one, with little understanding or appreciation for modern agriculture and forestry, find their own lifestyles in direct conflict with the demands of these industries. Often these conflicts result in compromised health and safety; one example being decreased highway safety with farm equipment and cars competing on rural roads. The crucial economic, environmental and open space benefits of agriculture and forestry are compromised by such development. We oppose the creation of isolated development areas that are inefficient in terms of the full range of public facilities and services funded with public dollars. Public investments in areas such as this are best directed to agricultural and forestry preservation. This site is also designated as a "Good Recharge" area, meaning that the area has valuable ground water recharge qualities. Additionally, this site overlaps with the State's Green Infrastructure Investment Strategy Plan. The Forest Lands layer is present in this site; this designation identifies areas that possess unique natural features that are valuable for preservation.

The Delaware Department of Agriculture supports growth which expands and builds on existing urban areas and growth zones in approved State, county and local plans. Where additional land preservation can occur through the use of transfer of development rights, and other land use measures, we will support these efforts and work with developers to implement these measures. If this project is approved we will work with the developers to minimize impacts to the agricultural and forestry industries. 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. The project location shares its eastern boundary with the Fox Den Expansion Agricultural District. The following 50 and 300 foot restrictions will apply to the Aventuris Residential subdivision.

Please see Delaware Code Title 3, Chapter 9, Subchapter II, Section 910.

**§ 910. Agricultural use protections.**

(a) Normal agricultural uses and activities conducted in a lawful manner are preferred and priority uses and activities in Agricultural Preservation Districts. In order to establish and maintain a preference and priority for such normal agricultural uses and activities and avert and negate complaints arising from normal noise, dust, manure and other odors, the use of agricultural chemicals and nighttime farm operations, land use adjacent to Agricultural Preservation Districts shall be subject to the following restrictions:

(1) For any new subdivision development located in whole or in part within 300 feet of the boundary of an Agricultural Preservation District, the owner of the development shall provide in the deed restrictions and any leases or agreements of sale for any residential lot or dwelling unit the following notice:

This property is located in the vicinity of an established Agricultural Preservation District in which normal agricultural uses and activities have been afforded the highest priority use status. It can be anticipated that such agricultural uses and activities may now or in the future involve noise, dust, manure and other odors, the use of agricultural chemicals and nighttime farm operations. The use and enjoyment of this property is expressly conditioned on acceptance of any annoyance or inconvenience which may result from such normal agricultural uses and activities."

(2) For any new subdivision development located in whole or in part within 50 feet of the boundary of an Agricultural Preservation District, no improvement requiring an occupancy approval shall be constructed within 50 feet of the boundary of the Agricultural Preservation District.

(b) Normal agricultural uses and activities conducted in accordance with good husbandry and best management practices in Agricultural Preservation Districts shall be deemed protected actions and not subject to any claim or complaint of nuisance, including any such claims under any existing or future county or

municipal code or ordinance. In the event a formal complaint alleging nuisance related to normal agricultural uses and activities is filed against an owner of lands located in an Agricultural Preservation District, such owner, upon prevailing in any such action, shall be entitled to recover reasonably incurred costs and expenses related to the defense of any such action, including reasonable attorney's fees (68 Del. Laws, c. 118, § 2.).

**Public Service Commission - Contact: Andrea Maucher 739-4247**

Any expansion of natural gas or installation of a closed propane system must fall within Pipeline Safety guidelines. Contact: Malak Michael at (302) 739-4247.

**Delaware State Housing Authority – Contact Karen Horton 739-4263**

The proposal is to develop 152 single-family residential lots on 152.22 acres. The proposed development is located on the north side of Lewis Drive, east of SR 1 in northeast Dover. According the *State Strategies Map*, the proposal is located in an Investment Level 4 area and outside the growth zone. As a general planning practice, DSHA encourages residential development in areas where residents will have proximity to services, markets, and employment opportunities, such as Investment Level 1 and 2 areas outlined in the State Strategies Map. Furthermore, the proposal is located east of SR 1 and in an area targeted for agriculture activities and natural resource protection and therefore is inconsistent with where the State would like to see new residential development.

**Department of Education – Contact: John Marinucci 739-4658**

DOE acknowledges and notes that this development is outside the development zone.

If this development is approved, DOE requests developer work with the local school district transportation department to establish developer supplied bus stop shelter ROW and shelter structures, interspersed throughout the development as determined and recommended by the local school district

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

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

Sincerely,

A handwritten signature in cursive script that reads "Constance C. Holland". The signature is written in black ink and is positioned above the printed name and title.

Constance C. Holland, AICP  
Director

CC: Kent County