



STATE OF DELAWARE  
EXECUTIVE DEPARTMENT  
OFFICE OF  
STATE PLANNING COORDINATION

April 27, 2005

Mr. Keith Kooker  
Landmark Engineering  
29 South State Street  
Dover, DE 19901

RE: PLUS review – PLUS 2005-01-10; Millwood Crossing (Revised site plan)

Dear Mr. Kooker:

Thank you for meeting with State agency planners on April 6, 2005 to discuss the proposed plans for the Millwood Crossing project to be located on Dyke Branch Road.

This revised plan was reviewed because the version submitted to the County differed significantly from the version originally reviewed through the PLUS process on January 26, 2005. We would like to note that this re-review of the plan did not alter many of the agency comments. It did, however, resolve some serious concerns that were related to the original County submission which proposed 120 lots (as opposed to 102 reviewed through PLUS in January). Revisions have been made to that plan during the interim period which have addressed issues related to the community septic system and active open space areas. According to the information received, the current plan represents a subdivision containing 114 units on 128.70 acres.

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.

**Executive Summary**

The following section includes some site specific highlights from the agency comments found in this letter. This summary is provided for your convenience and reference. The

full text of this letter represents the official state response to this project. ***Our office notes that the applicants are responsible for reading and responding to this letter and all comments contained within it in their entirety.***

### **State Strategies/Project Location**

- This project is located in Investment Level 4 according to the State Strategies for Policies and Spending. It also located East of Route 1 and is outside Kent County's growth zone. **The State is opposed to this development project.** No State funding for infrastructure or services is expected to serve this development project.
- A State funded, County maintained sewer line is adjacent to this property. This sewer line was installed as a part of the "Northeast Sanitary Sewer District" project. Since the funding criteria prohibit use of the sewer infrastructure to serve new growth, this project will not be permitted to have access to this sewer line.

### **Street Design and Transportation**

- DelDOT notes that the developer can expect to be required to upgrade Dyke Branch Road to 12 foot lanes with 5 foot shoulders from Route 1 to the east limit of the site frontage.
- DelDOT further recommends that the County require the developer to put funding in escrow to pay for pedestrian improvements between Route 1 and the site. The funding would be used when DelDOT does pedestrian improvements along Dyke Branch Road, West of Route 1.

### **Natural and Cultural Resources**

- In order to preserve the buffering capacity and wildlife habitat on site the large tract of open space located in the site plan should be designated along the wetland complex and forested areas on site
- In recognition of this concern, the Department strongly recommends that the applicant preserve, in its entirety, the existing natural forested buffer (both wetlands and uplands) adjacent to the Dyke Branch and the unnamed tributary bisecting the southern portion of subject parcel
- It is strongly recommended that all Stormwater management pond(s) be at least 100 feet away from all wetlands and/or streams.

- There are know archeological sites along Dyke Branch and a high probability that others exist on the site. The developer should contact the State Historic Preservation Office at 739-5685 to arrange for a site visit.
- Kent Conservation District notes that some upgrades may be needed to the existing farm pond to eliminate potential hazards associated with steep slopes. These upgrades will be necessary whether or not the pond is used for stormwater management.

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 application that will result in 114 residential units East of Route 1 in Kent County (outside the growth zone). This project is located in Investment Levels 4 according to the 2004 State Strategies for Policies and Spending. 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. 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.

**The State is opposed to this development project.** We would like to note that no State funding for infrastructure or services is expected.

**State Historic Preservation Office (SHPO) – Contact: Alice Guerrant 739-5685**

There are areas of high potential for prehistoric and historic period archaeological sites on this parcel. There is a historic farm complex on the property as well. The SHPO would be happy to work with the owners/developers to locate any actual sites that may be on the property and perhaps preserve them in open space. They would also like the opportunity to photograph and record the buildings on the property before they are demolished.

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

The addition of 12 lots and movement of the community septic system do not change DelDOT's previous comments on the proposed development. DelDOT remains opposed to the subject parcel being developed.

Because the development is proposed for a Level 4 Area, it is inconsistent with the Strategies for State Policies and Spending. We make note of the fact that the proposed development is also outside of the Kent County growth zone, making it inconsistent with the county comprehensive plan as well. In addition, the State has been actively pursuing the protection of the area east of SR 1. The reason is much of this area is environmentally sensitive, comprised of wetlands and wildlife habitats, or prime agricultural land, which should be, and in many cases has been preserved.

From a fiscal responsibility perspective, development of this site is likewise inappropriate. The cost of providing services, such as bus or paratransit, to low-density, isolated, residential development is an inefficient and wasteful use of the State's fiscal resources. With no on-site amenities such as stores for the purchase of convenience goods, auto trips must be made for basic necessities, which has air quality impacts as well. 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 increases.

Because the development is inconsistent with the Strategies for State Policies and Spending, DelDOT will not participate in the cost of any road improvements needed to support this development. The comments that follow are technical, and are not intended to suggest that DelDOT supports this development proposal.

- a. The response to item 37 on the PLUS form describes Dyke Branch Road as having 12-foot lanes and 5-foot paved shoulders. While the widths may be correct, the shoulders are not paved. The developer should expect that DelDOT will require them to widen the road as necessary to achieve those widths and to pave the shoulders between the east limit of the site frontage and Delaware Route 1 as part of their entrance construction.
- b. DelDOT will also require that a paved multi-modal path, located in a 15-foot wide permanent easement, be provided across the frontage of the subject parcel (about 0.4 miles). Presently, about 1.7 miles of roadway, on Denney's Road and Dyke Branch Road west of Route 1, lack bicycle and pedestrian facilities. DelDOT does not yet have a DelDOT project to add those facilities, but if they did, it would have to be lengthened by another 0.33 miles to reach the subject parcel. Therefore, it is recommended that the County require the developer to escrow funds to cover the costs of right-of-way and construction to extend the path from the development frontage to a point west of Route 1.
- c. While DelDOT does not support the development of the subject parcel or the adjoining parcels, it is recommended that the stub streets be provided to the parcels to the east and west to allow for the possibility that those parcels may be developed anyway.

- d. The developer's engineer should contact the DelDOT project manager for Kent County, Mr. Brad Herb of Johnson, Mirmiran & Thompson, regarding their requirements for streets and access. Mr. Herb may be reached at (302) 266-9080.

**The Department of Natural Resources and Environmental Control – Contact: Kevin Coyle 739-3091**

**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.

**Design Recommendation**

In order to preserve the buffering capacity and wildlife habitat on site the large tract of open space located in the site plan should be designated along the wetland complex and forested areas on site.

**Community Wastewater System**

The mapping unit designated as Sassafras (Sa) appears to pose moderate limitations for on-site wastewater treatment and disposal. The mapping unit designated as Woodstown (Ws) has severe limitations for wastewater treatment and disposal and is best avoided. Removal, disturbance or compaction of the soil during any portion of the construction and building phase other than that necessary for system installation will result in the rescission of the site evaluation approval.

Due to location of this proposed subdivision within the environmentally sensitive Delaware Bay Drainage Basin and proposed nutrient loading reductions in the near future the developer may want to consider the use of more advanced treatment in conjunction with the large/community on-site wastewater treatment and disposal system.

A State-funded, County-maintained sewer line is adjacent to this property. This sewer line was installed as part of the "Northeast Sanitary Sewer District Project". Since the funding criteria prohibit the use of this sewer infrastructure to serve new growth, this project will not be permitted to have access to this sewer line.

This project represents a major land development that will result in 114 residential units east of State Route 1 in Kent County (outside the growth zone). This project is located in an Investment Level 4 area according to the 2004 State Strategies for Policies and Spending. 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. 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.

Based on the findings to date, the Department believes the proposed Millwood Crossing Subdivision would be feasible under the current criteria cited in the Regulations Governing the Design, Installation and Operation of On-Site Wastewater Treatment and Disposal Systems, dated January 4, 1985, as revised on March 11, 2002. However, because of concerns associated with development east of State Route 1, outside the County's growth zone, and in an Investment Level 4 area, the Department cannot support this proposed subdivision at this time.

### **Soils**

According to the Kent County soil survey, Sassafras and Johnston were mapped in the immediate vicinity of the proposed construction. Sassafras is a well-drained upland soil that has few limitations for development. Johnston is a poorly-drained wetland associated (**hydric**) floodplain soil that has severe limitations for development.

### **Wetlands and Buffers**

Statewide Wetland Mapping Project (SWMP) maps indicate the presence of palustrine forested wetlands, palustrine open water and palustrine emergent wetlands on the parcel. PLUS materials indicate that there will not be direct impacts to these wetlands through

construction activities; however, secondary impacts of construction could be detrimental to the health of these wetlands and their associated streams. Impacts to these wetlands are regulated by the Army Corps of Engineers through Section 404 of the Clean Water Act.

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. Impacts to streams and associated riparian wetlands, including road crossings, are regulated by the DNREC Wetlands and Subaqueous Lands Section, and by the Corps of Engineers.

These wetlands provide water quality benefits, attenuate flooding and provide important habitat for plants and wildlife. Vegetated buffers of no less than 100 feet should be employed from the edge of the wetland complex. The developer should note that both DNREC and 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.

To find out more about permitting requirements, the applicant is encouraged to attend a Joint Permit Process Meeting. These meetings are held monthly and are attended by federal and state resource agencies responsible for wetland permitting. Contact Denise Rawding at (302) 739-4691 to schedule a meeting.

Lots should exclude all wetlands and associated buffers. It is important to 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. Vegetated buffers of no less than 100 feet should be employed from the edge of the wetland complex on site.

It should also be noted that this parcel immediately borders sensitive headwater or near headwater riparian wetlands associated with two tributaries (Dyke Branch and an unnamed tributary) flowing into the Leipsic River. Headwater streams and their associated wetlands are important for the protection of water quality and the maintenance/integrity of the ecological functions throughout the length of the stream, including the floodplain system downstream. Since such streams are a major avenue for nutrient-laden stormwater and sediment runoff, their protection deserves the highest priority.

**In recognition of this concern, the Department strongly recommends that the applicant preserve, in its entirety, the existing natural forested buffer (both wetlands and uplands) adjacent to the Dyke Branch and the unnamed tributary bisecting the southern portion of subject parcel. Efforts to maximize or expand the existing natural forested buffer width via planting of native woody or herbaceous vegetation, is further recommended.**

Finally, should the applicant decide to construct a pond(s) on subject parcel, the Department strongly recommends that the periphery of said pond(s) [including stormwater detention pond(s)] contain a 50-foot buffer of native woody and/or herbaceous vegetation. Vegetated buffer(s) are an important mitigative methodology that helps to remove excess nutrient runoff from overland flow while discouraging geese habitation and the problems associated with their nutrient-enriched excrement. **It is strongly recommended that all Stormwater management pond(s) be at least 100 feet away from all wetlands and/or streams.**

### **TMDLs**

Although Total Maximum Daily Loads (TMDLs) as a “pollution runoff mitigation strategy” to reduce nutrient loading have not yet been developed for most of the tributaries or subwatersheds of the Delaware Bay watershed to date, work is continuing on their development. TMDLs for the Leipsic River subwatershed, of which this parcel is part, are scheduled for completion in December 2006.

Therefore, until the specified TMDL reductions and pollution control strategies are adopted, it shall be incumbent upon the developer to employ best available technologies (BATs) and/or best management practices (BMPs) as “methodological mitigative strategies” to reduce degradative impacts associated with development.

### **Water Supply**

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 302-739-3665.

### **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. Access to the proposed stormwater facilities must be provided for periodic maintenance. This access should be at least 12 feet wide to leading to the facility and around the facility's perimeter. Maintenance set aside areas 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. If the existing farm pond is to be used for stormwater management, it must be modified to meet Small Pond Code 378. If this pond will not be used to meet any stormwater management regulatory requirements, no modification will be required. However, since this pond will now be located within a residential subdivision, we recommend analyzing that pond for safety and incorporate safety components, such as benching, as part of this plan. The Kent Conservation District recommends any steep slopes be modified to eliminate potential hazards associated with the pond, which will be the eventual responsibility of the homeowners.
2. Adequate access to and around the stormwater management facilities must be provided. From the current lot configuration, access to the pond on the northeast corner of the project, west of the stream, may be difficult. If any storm drain piping will be connected to that pond from the road down lot lines, it is recommended that

that area be designated as open space and maintenance access, rather than just an easement on the lots.

3. Stormwater quality management must be provided for runoff from the backs of lots. This stormwater quality treatment may be provided by filtration or by buffering the existing streams. We would recommend reforesting the open space area between the backs of lots and the existing woods line to provide an additional width of riparian buffer.
4. The preferred methods of stormwater management are those practices that maximize the use of the natural features of a site, promote recharge and minimize the reliance on structural components.
5. 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.
6. A letter of no objection to recordation will be provided once the detailed Sediment and Stormwater Management plan has been approved.
7. Proper drainage of developed lots and active open space should be considered in the development of the grading plan for this subdivision.
8. Based on the site characteristics, a pre-application meeting is suggested to discuss stormwater management and drainage for this site.

### **Drainage**

The Drainage Section is aware of an existing drainage problem upstream of this project. The revised plan does not show a stormwater management area. The Drainage section requests to know the location of stormwater outlets.

The Drainage Section requests that all precautions be taken to ensure the project does not hinder any off site drainage upstream of the project or create any off site drainage problems downstream by the release of on site storm water. The Drainage Section further requests all existing farm ditches on the property be checked for function and cleaned, if needed, prior to the construction of homes. Wetland permits may be required before cleaning ditches.

The Drainage Section strongly recommends any drainage conveyance between two parcels within a subdivision be dedicated as a drainage easement and such easement be designated as passive open space, not owned by individual landowners. The easement should be planted as vegetated buffers and be of sufficient width to allow for future drainage maintenance or the reconstruction of drainage conveyances as described below:

- Along an open ditch or swale the Drainage Section recommends a maintenance equipment easement of 25' measured from the top of bank on the maintenance side, and a 10' setback easement measured from top of bank on the non-maintenance side. These easements should be planted and maintained as vegetated buffers to aid in the reduction of sediment and nutrients entering into the drainage conveyance. 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. Trees and shrubs planted within the maintenance easement should be native species, spaced to allow for mechanized drainage maintenance at maturity. Trees should not be planted within 5 feet of the top of ditch to avoid future blockages from roots.
- Along a stormwater pipe the Drainage Section recommends a maintenance equipment easement of 15' each side of the pipe as measured from the pipe centerline. These easements should be planted and maintained as vegetated buffers to aid in the reduction of sediment and nutrients entering into the drainage conveyance. Grasses, forbs and sedges planted within these easements should be native species, selected for their height, ease of maintenance, erosion control, and nutrient uptake capabilities. Trees and shrubs planted within the maintenance easement should be spaced to allow for mechanized drainage maintenance at maturity.

The above-mentioned easement widths are necessitated for the maintenance and/or reconstruction of drainage conveyances. For the further enhancement of water quality, the Drainage Section encourages additional widths of vegetated buffers on this project.

### **Floodplains**

Portions of the site are within the 100-year floodplain which cannot be subdivided according to Kent County's subdivision regulations.

### **Forests**

According to 2002 aerial photos there is a forested area in the eastern portion of this parcel. Site plans show no impacts to this forested area.

The forested areas on-site should be viewed as a community asset and managed appropriately. Forested areas on-site set aside for conservation purposes should be placed into a permanent conservation easement or other binding protection. These areas should be clearly marked and delineated so that residents understand their importance and so that homeowner activities do not infringe upon these areas.

## **Open Space**

PLUS materials indicate that 57.5 acres of open space is proposed for this parcel.

To maximize the existing buffering capacity and wildlife habitat on site, it is recommended that lot lines and other infrastructure (such as storm water management ponds) be pulled out of the forest and that areas of community open space be designated along the forested areas.

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

Open space containing forest and/or wetlands should be placed into a permanent conservation easement or other permanent protection mechanism. Conservation areas should also be demarked to avoid infringement by homeowners.

## **Nuisance Waterfowl**

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. However, native plantings, including tall grasses, wildflowers, shrubs, and trees at the edge and within an adequate buffer area around ponds, are not as attractive to geese because they do not feel as safe from predators and other disturbance when their view of the area is blocked. 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.

## **Recreation**

It is strongly recommended that a pedestrian connection to the Blue Heron's Nest development to the east (reviewed under LUPA 11030301). It is also recommended that sidewalks be built fronting every residence and stub streets. A complete system of sidewalks will: 1) fulfill the recreation need for walking and biking facilities, 2) provide opportunities for neighbors to interact in the community, and 3) facilitate safe, convenient off-road access to neighboring communities, public mass transit stops, schools, stores, work, etc.

**Air Quality**

Air pollution threatens the health of human beings and other living things on our planet. While often invisible, pollutants in the air create smog and acid rain, cause cancer or other serious health effects, diminish the protective ozone layer in the upper atmosphere, and contribute to the potential for world climate change. Breathing polluted air can have numerous effects on human health, including respiratory problems, hospitalization for heart or lung disease, and even premature death. Some can also have effects on aquatic life, vegetation, and animals.

The Department of Natural Resources and Environmental Control is asking that local jurisdictions consider mitigation to help resolve this issue. Mitigation might involve limiting large new developments to growth zones, focusing development to urban areas capable of providing mass transit services, requiring more energy efficient homes which would lessen air quality impacts, and promoting walkability and bikability within and between developments and town centers.

Once complete, vehicle emissions associated with this project are estimated to be 8.7 tons (17,497.8 pounds) per year of VOC (volatile organic compounds), 7.2 tons (14,487.0 pounds) per year of NOx (nitrogen oxides), 5.3 tons (10,688.8 pounds) per year of SO2 (sulfur dioxide), 0.5 ton (951.5 pounds) per year of fine particulates and 731.8 tons (1,463,669.5 pounds) per year of CO2 (carbon dioxide).

Emissions from area sources associated with this project are estimated to be 3.5 tons (7,057.7 pounds) per year of VOC (volatile organic compounds), 0.4 ton (776.6 pounds) per year of NOx (nitrogen oxides), 0.3 ton (644.4 pounds) per year of SO2 (sulfur dioxide), 0.4 ton (831.6 pounds) per year of fine particulates and 14.3 tons (28,610.2 pounds) per year of CO2 (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 1.4 tons (2,797.1 pounds) per year of NOx (nitrogen oxides), 4.9 tons (9,729.2 pounds) per year of SO2 (sulfur dioxide) and 717.5 tons (1,435,059.4 pounds) per year of CO2 (carbon dioxide).

	VOC	NOx	SO <sub>2</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
Mobile	8.7	7.2	5.3	0.5	731.8
Residential	3.5	0.4	0.3	0.4	14.3
Electrical Power		1.4	4.9		717.5
TOTAL	12.2	9.0	10.5	0.9	1463.6

## **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 estimate the amount of solid waste that will be generated as a result of construction and occupancy.

### **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 Dyke Branch Road must be constructed so fire department apparatus may negotiate it.
- Fire department access shall be provided in such a manner so that fire apparatus will be able to locate within 100 ft. of the front door.
- Any dead end road more than 300 feet in length shall be provided with a turn-around or cul-de-sac arranged such that fire apparatus will be able to turn around by making not more than one backing maneuver. The minimum paved radius of the cul-de-sac shall be 38 feet. The dimensions of the cul-de-sac or turn-around shall be shown on the final plans. Also, please be advised that parking is prohibited in the cul-de-sac or turn around.
- The use of speed bumps or other methods of traffic speed reduction must be in accordance with Department of Transportation requirements.
- The local Fire Chief, prior to any submission to our Agency, shall approve in writing the use of gates that limit fire department access into and out of the development or property.

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: Mark Davis 739-4811**

The “revision” of this site plan does not alter DDA’s position on this property. The Department of Agriculture is strongly opposed to the development of the site. They also oppose suburban development east of SR1. Please refer to comments previously submitted regarding this site. Those comments still express our valid position.

**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.

Application notes community system with no provider identified. If wastewater services are provided by a non-governmental entity, and there are more than 50 customers served, the provider will need to apply to the PSC for a Certificate of Public Convenience and Necessity (CPCN). Additional requirements may apply if the provider has not previously been awarded a CPCN by the Commission.

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

As a general 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 agricultural activities and natural resource protection, and therefore inconsistent with where the State would like to see new residential development.

**Delaware Emergency Management Agency – Contact: Don Knox 659-3362**

**b. 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 Dyke Branch Road must be constructed so fire department apparatus may negotiate it.
- Fire department access shall be provided in such a manner so that fire apparatus will be able to locate within 100 ft. of the front door.
- Any dead end road more than 300 feet in length shall be provided with a turn-around or cul-de-sac arranged such that fire apparatus will be able to turn around by making not more than one backing maneuver. The minimum paved radius of the cul-de-sac shall be 38 feet. The dimensions of the cul-de-sac or turn-around shall be shown on the final plans. Also, please be advised that parking is prohibited in the cul-de-sac or turn around.
- The use of speed bumps or other methods of traffic speed reduction must be in accordance with Department of Transportation requirements.
- The local Fire Chief, prior to any submission to our Agency, shall approve in writing the use of gates that limit fire department access into and out of the development or property.

**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

PLUS 2005-01-10

April 27, 2005

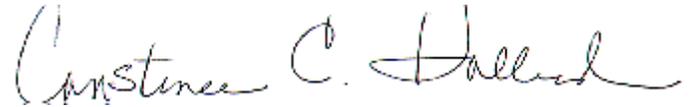
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Preliminary meetings with fire protection specialists are encouraged prior to formal submittal. Please call for appointment. Applications and brochures can be downloaded from our website: [www.delawarestatefiremarshal.com](http://www.delawarestatefiremarshal.com),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

**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 blue ink that reads "Constance C. Holland". The signature is written in a cursive style with a large initial "C".

Constance C. Holland, AICP  
Director

CC: Kent County