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June 14, 2008

Constance Holland, AICP  
State Planning Director  
Office of Management & Budget  
112 William Penn Street  
Dover, Delaware 19901

**RE: Response to Agency Comments  
PLUS 2008-05-02; Wandendale Regional Water Recharge Facility  
AKA, Wandendale Regional Wastewater Treatment & Disposal Facility**

Dear Ms. Holland:

Below, please find responses to the referenced PLUS agency comments coupled with the comments themselves for clarity and ease of reference.

**COMMENT**

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

The State does not support this facility as it will be in conflict with the Strategies for State Policies and Spending and would increase the pressure to build in the Level 4 areas of the County. While we support eliminating existing septic tanks, this facility is inconsistent with the current Sussex County comprehensive plan and as designed it will serve new development within the Low Density Area as defined by the County.

Finally at the PLUS meeting the applicant could not produce a finalized document which addresses our concerns or those raised by Sussex County and until such time that a formal agreement has been reached with Sussex County and efforts have been made to address the environmental and land use impacts, this office cannot support this application.

**RESPONSE**

In general terms, most of the Office's comments have not been grounded with any evidence supporting its sweeping statements and are, for the most part, incorrect as follows:

The proposed facility will be owned and operated by the privately owned company Tidewater Environmental Services, Inc. and will require no public spending of any kind nor will the existence of such

a facility cause any expenditure by the State. Thus, the proposed facility is not in conflict with Strategies for State Policies and Spending which, in theory, guides where State funds will be spent.

There is no evidence whatsoever that the existence of the proposed facility will “increase the pressure to build in the Level 4 areas of the County”. The mere existence of the facility has no impact on development one way or the other and the facility, as proposed, is entirely consistent with the Sussex County Comprehensive Plan as evidenced by the attached Statement of Conformity. Furthermore, approval of any new development is the strict purview of Sussex County whether or not the proposed facility is approved or exists.

No document was produced at the PLUS meeting addressing Office of State Planning Coordination or County concerns because there was no way to know what the Office’s or County’s concerns were until the comments to which this is a response were made and received. We do not understand this comment.

A meeting was held with the Sussex County Engineer wherein the proposed facility and intended service area was discussed, certain conditions of approval were agreed upon (for use if the proposed Conditional Use is approved by the County Council) and the County Engineer no longer has any objection to the proposed facility.

We are unaware of what environmental impacts the Office is referring to.

- All required buffers have been established
- Voluntary 100’ buffers have been established between both Federal and State wetlands
- Tree clearing has been minimized; forest land has been almost entirely preserved
- Nutrients leaving the site post development have been reduced to a level lower than required in the Proposed Pollution Control Strategy
- Farm land has been almost entirely preserved
- Ground water aquifers are being recharged

In conclusion, the proposed Conditional Use is entirely consistent with the Sussex County Comprehensive Plan and Zoning Ordinance and with proposed conditions is not objected to by the Sussex County Engineer, has minimal impacts to the site, achieves a number of environmental and cultural benefits including the eventual removal of septic systems and reduces consumer costs through consolidation of infrastructure. Furthermore, no material evidence has been provided by the Office demonstrating in what manner it believes that its comments made apply.

### **COMMENT**

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

1) The proposed facility is being sized to serve new development outside the Sewer District and the presently identified Level 1, 2 and 3 Areas. For this reason, it deserves further discussion.

2) The proposed facility has frontage on Delaware Route 24, Robinsonville Road (Sussex Road 277), Jolyn’s Way (Sussex Road 289) and Camp Arrowhead Road (Sussex Road 279). Route 24 is classified as a

major collector road and the others are classified as local roads. DeIDOT's policy is to require dedication of sufficient land to provide a minimum right-of-way width of 40 feet from the centerline on local roads and 30 feet from the centerline on local roads. Therefore DeIDOT will require right-of-way dedication along the frontage to provide any additional width needed from this project. DeIDOT has projects under development to improve both Route 24 and Camp Arrowhead Road that may require additional rights-of-way. They ask that the applicant contact the managers of those projects, respectively Mr. Mark Harbeson and Mr. Jeffrey Van Horn, to determine whether any additional rights-of-way will be needed from the proposed facility and to reserve them as necessary. Mr. Harbeson may be reached at (302) 760-2346. Mr. Van Horn may be reached at (302) 760-2748.

3) Entrance permits will be needed for the proposed access drives on Route 24, Jolyn's Way (Sussex Road 289) and Camp Arrowhead Road (Sussex Road 279). Because these will be relatively low-volume driveways once the facility is built, DeIDOT anticipates that the entrance permitting can be handled entirely through our South District Office. The applicant should contact our South District Permit Supervisor, Mr. Gemez Norwood in this regard. Mr. Norwood may be reached at (302)853-1342.

### **RESPONSE**

Comment 1) The facility has been sized to serve committed development projects together with enough capacity to, eventually, treat all sewage from existing homes in the proposed service area with a reserve capacity of 400 EDU's.

Comment 2) It is understood that if the Conditional Use is approved, further coordination with DeIDOT must take place prior to approval of Final Site Plans.

Comment 3) Understood

### **COMMENT**

#### **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.

### **RESPONSE**

#### Understood

The design of the facility is driven by soil suitability, minimization of infrastructure length and impervious surface, minimization of forest clearing, having no wetland impact, creating voluntary 100' buffers around both Federal and State wetlands and preservation of current agricultural practices while reducing nutrients leaving the site to levels beyond any agency requirement thus protecting sensitive resources through appropriate site design.

### **COMMENT**

#### Water Quality

- The Rapid Infiltration Basin (RIB) proposed on the northern portion on the combined parcel area should not be sited adjacent to the headwater tributary connected to Love Creek, nor should forest cover be removed to accommodate it. Doing so will increase the volume of water discharged to the creek while potentially decreasing water quality. DNREC strongly recommends that the RIB system be relocated to a more suitable location and the forest cover retained.

### **RESPONSE**

The referenced RIB is appropriately located based on soils suitability. There will be only positive impacts on water quality as a result of the design of the facility in conformance with all DNREC and other agency regulations. In addition, nutrients leaving the site post development will be less than those leaving the site currently, which will have a positive impact on the creek and Inland Bays.

### **COMMENT**

- The applicant should maintain a minimum 100-foot buffer width (planted with native vegetation) from all irrigation lagoons, RIBs, and all building structures to all wetlands and water bodies. As mentioned previously, the buffering width from the proposed RIBs system is considerably narrower than recommended. The buffering width proposed from the wetlands, exclusive of the wetlands adjacent to the RIBs system, was unclear and should be clarified.
- Since irrigation lagoons are lined and impervious, they should be included in the finalized calculation for surface imperviousness.

### **RESPONSE**

The plan has been revised to provide a voluntary minimum 100' buffer between all waters and wetlands identified on the site by available mapping inventories, though there is no requirement of this kind in law or regulation. The buffer will be maintained undisturbed in existing vegetation. There is no requirement in law or regulation to plant with native vegetation.

The lagoons may be included in the finalized calculation for surface imperviousness.

**COMMENT**

**Water Supply**

The project information sheets state water will be provided to the project by Tidewater Utilities via a central public 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 83-W-15. 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.

**RESPONSE**

Understood

**COMMENT**

**Water Resource Protection Areas**

The Ground-Water Protection Branch (GPB) has determined that the project falls within a wellhead protection area for Tidewater Utilities (TWU) Love Woods, PWSID 00A0329 (see following map and attached map). Wellhead protection areas are surface and subsurface areas surrounding a public water supply well where the quantity and quality of ground water moving toward these wells may be adversely affected by land use activities.

The site plan submitted by the Developer show Rapid Infiltration Basins (RIBs) Area B in the northwest corner of tax map parcel 234-7.00-127.00. According to the Delaware Geological Survey ground water elevation GIS overlays, this RIB system is approximately 360 feet up-gradient of the TWU wells (see map). As cited, this RIB system is a potential source of contamination if there is a failure in the system that may cause the TWU Public Drinking Water System to exceed drinking water standards.

In addition, according to the 2002 Land Use GIS overlay, the RIB system is cited in a wetland. By design, RIB systems infiltrate water into the soil profile at a rapid rate. Wetlands do not allow for the designed purpose.

*Recommendation:*

1) Move Rapid Infiltration Basins (RIB) Area B to another location outside the wetland and down or side-gradient of the TWU wells.

**RESPONSE**

The referenced RIB has been located on soils suitable for this use based on scientific soils analysis in accordance with DNREC guidelines. Because the soils in this area have proven to be suitable for this use,

it is almost impossible for the area to be wetlands. However, if any portion of the area proves to be a wetland as a part of final delineation and site plans, any RIB will be relocated.

The comment on RIB B system failure does not take into account the multiple redundancy of the Wandendale facility. Should RIB B show evidence of pending malfunction, it would be taken out of service and the treated effluent either stored in one of the lagoons being provided or it would be disposed of on a spray field or in RIB A. The proposed wastewater treatment facility is a biological nutrient membrane bioreactor with ultraviolet light disinfection. As such it provides complete bacterial reduction and 4-log virus removal before disinfection. Membrane cassettes can be isolated and taken out of service within minutes. A generator will be provided to prevent treatment system malfunction during a power failure. The response to a treatment system failure would be to divert the effluent to one of the lagoons or to a spray field or RIB A.

**COMMENT**

**Sediment and Erosion Control/Stormwater Management**

- A detailed sediment and stormwater plan will be required prior to any land disturbing activity taking place on the site. Contact the reviewing agency to schedule a pre-application meeting to discuss the sediment and erosion control and stormwater management components of the plan as soon as practicable. The site topography, soils mapping, pre- and post-development runoff, and proposed method(s) and location(s) of stormwater management should be brought to the meeting for discussion. The plan review and approval as well as construction inspection will be coordinated through the Sussex Conservation District. Contact Jessica Watson at the Sussex Conservation District at (302) 856-2105 for details regarding submittal requirements and fees.

**RESPONSE**

Understood

**COMMENT**

**Drainage**

- 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 water. The Drainage Program requests that the engineer check existing downstream ditches and pipes for function and blockages prior to the construction. Notify downstream landowners of the change in volume of water released on them.

**RESPONSE**

All drainage design will be performed in accordance with all applicable law and agency requirements as well as standard civil engineering practice.

**COMMENT**

**Floodplains**

A portion of the parcels on Sheets No. 3 and No. 4 (included with the PLUS Application form) are located in the floodplain. It doesn't appear that there will be any development in the floodplain. It is suggested that

adequate measures be taken to allow the 100-year flood event to occur. For example, the Rapid Infiltration Basins (RIBs) should be constructed in a manner that would allow the base flood elevation to infiltrate the site without damaging the infiltration areas and not release wastewater into the flood waters and eventually Love Creek. It is recommended that the applicant check FEMA's Flood Insurance Study for Love Creek and determine an adequate level of protection above the 500-year flood elevation.

**RESPONSE**

All facilities will be located in accordance with all applicable legal and regulatory requirements.

**COMMENT**

**Rare Species/Site Visit Request**

DNREC program staff have never surveyed the project area; therefore, it is unknown if State-rare or federally listed plants and animals or unique natural communities are present within the project area. In order to provide the applicant with information, the program staff respectfully requests the opportunity to survey the project area. This survey would be conducted at no cost or liability to the landowner/developer. It would allow DNREC to provide more informed comments and add to the State's database. Information gathered would also be used in their effort to map the vegetative communities throughout the State. Please note that our staff has the most experience utilizing rare species survey methods. If the landowner would allow a site visit, please contact Edna Stetzar, Environmental Review Coordinator, at (302) 653-2880, ext. 101.

**RESPONSE**

We appreciate the offer and contact information.

**COMMENT**

**Forested Habitat**

Cumulative forest and wildlife habitat loss throughout the State is of utmost concern to the Division of Fish and Wildlife which is responsible for conserving and managing the State's wildlife (see [www.fw.delaware.gov](http://www.fw.delaware.gov) and the Delaware Code, Title 7). Because of an overall lack of habitat protection, we have to rely on applicants and/or the entity that approves the project (i.e., counties and municipalities) to consider implementing measures that will aide in habitat loss reduction.

*Recommendations:*

1. According to the application, 10.4 acres out of 131 acres of trees will be cleared, which will leave most of the forest intact. Maintaining habitat integrity and connections to adjacent forested areas is recommended to minimize impacts to wildlife.
2. If feasible, those features that will require tree clearing should be relocated to a non-forested portion of the site.
3. It is recommended that tree clearing not occur April 1st to July 31st to minimize impacts to birds and other wildlife that utilize forested areas for breeding.

**RESPONSE**

Comment 1) Habitat integrity and connections to adjacent forested areas to minimize impacts to wildlife have been maintained to the maximum degree possible given the proposed use.

Comment 2) It is not feasible to relocate the proposed RIBS inasmuch as they are directly related to appropriate soils whether forested or not.

Comment 3) Inasmuch as these months are some of the best months for construction due to weather conditions, it is unlikely that this recommendation can be followed. However, every effort has been made to minimize forest clearing and in all circumstances, the clearing occurs on the forest edge.

**COMMENT**

**Natural Areas**

Parcel 234-7.00-130: This project contains or borders land currently listed on Delaware's Natural Areas Inventory (NAI). Natural Areas contain lands of Statewide significance identified by the Natural Area Advisory Council as the highest quality and most important natural lands remaining in Delaware. Consideration should be given to protecting these resources during design and construction of this project.

The developer should investigate dedicating the Natural Area as a Nature Preserve through a conservation easement or donation of land. For more information, please contact the Office of Nature Preserves at 739-9235.

The forested area along the eastern edge of the parcel is on the NAI. The Division of Parks and Recreation greatly appreciates the effort to stay out of the listed natural area.

**RESPONSE**

No impact is proposed on State or Federal wetlands and voluntary 100' minimum buffers from all such features have been provided.

Conservation easements or donation of land may be considered by the land owners.

**COMMENT**

**Underground Storage Tanks**

There is one inactive and three active LUST sites located near the proposed project:

Village Mobil Mart (Citgo)	Shore Stop #25 (Tank Pit)
Facility #: 5-000135	Facility #: 5-000709
Project #: S9107133	Project #: S0409110
Shore Stop #254 (Dispenser)	King's Citgo, Angola
Facility #: 5-000709	Facility #: 5-000709
Project #: S0409109	Project #: S9110230

No environmental impact is expected from the above inactive/active LUST site(s). However, should any underground storage tanks or petroleum contaminated soil be discovered during construction, the Tank

Management Branch must be notified as soon as possible. It is not anticipated that 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.

### **RESPONSE**

All applicable legal and regulatory requirements will be met.

#### **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):

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

- Water distribution system capable of delivering at least 1500 gpm for 2- hour duration, at 20-psi residual pressure is required. Fire hydrants with 800 feet spacing on centers. (Mercantile)
- 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. Accessibility**

- All premises, which the fire department may be called upon to protect in case of fire, and which are not readily accessible from public roads, shall be provided with suitable gates and access roads, and fire lanes so that all buildings on the premises are accessible to fire apparatus. This means that the access road to the subdivision from the main thoroughfare must be constructed so fire department apparatus may negotiate it.
- Fire department access shall be provided in such a manner so that fire apparatus will be able to locate within 100 ft. of the front door.
- Any dead end road more than 300 feet in length shall be provided with a turn-around or cul-de-sac arranged such that fire apparatus will be able to turn around by making not more than one backing maneuver. The minimum paved radius of the cul-de-sac shall be 38 feet. The dimensions of the cul-de-sac or turn-around shall be shown on the final plans. Also, please be advised that parking is prohibited in the cul-de-sac or turnaround.
- 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. 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)

- Note indicating if building(s) is/are to be sprinklered
- Name of Water Provider
- Letter from Water Provider approving the system layout
- Provide Road Names, even for County Roads

Preliminary meetings with Fire Protection Specialists are encouraged prior to formal submittal. Please call for appointment. Applications and brochures can be downloaded from our website: [www.statefiremarshal.delaware.gov](http://www.statefiremarshal.delaware.gov), technical services link, plan review, applications or brochures.

**RESPONSE**

All applicable State Fire Marshal's Office regulations will be complied with.

**COMMENT**

**Department of Agriculture - Contact: Scott Blaier 739-4811**

The Delaware Department of Agriculture does not support this infrastructure project at this time because it has not been coordinated with Sussex County and their future sewer supported growth areas. The Department is also opposed to providing sewer service to areas currently designated as Investment Level 4 under the *Strategies for State Policies and Spending*.

**RESPONSE**

The proposed Conditional Use has been coordinated with the Sussex County Engineering Department which has no opposition to the proposal with certain agreed upon stipulations.

It is surprising to find that the Delaware Department of Agriculture is opposed to the proposed facility when the facility preserves a current agricultural use while providing the farmer with both lease income as well as an abundant irrigation water supply in the form of treated effluent which will increase crop yield, thus income.

In addition, the facility is designed with capacity to serve first, committed developments both within and without the County's sewer service area (which developments Tidewater has a State franchised obligation to serve) and, second, the eventual service of existing homes within the proposed service area with a reserve capacity of 400 EDU's. Thus the last remark is, simply, incorrect.

**COMMENT**

**Sussex County – Contact: Richard Kautz 855-7878**

The service area is undefined. To the extent the facility is designed to serve new development within the Low Density Area, the request is inconsistent with the existing and proposed Sussex County Comprehensive Plan. Serving already approved projects with their associated treatment facilities and taking existing septic systems off-line would be consistent with the Plan.

**RESPONSE**

The proposed approximate service area has been defined and incorporated into the Conditional Use application.

The facility is designed with capacity to serve first, committed developments both within and without the County's sewer service area (which developments Tidewater has a State franchised obligation to serve) and, second, the eventual service of existing homes within the proposed service area with a reserve capacity of 400 EDU's.

**COMMENT**

The Sussex County Engineer Comments:

The Sussex County Engineering Department is opposed to the proposed wastewater treatment and disposal facility to be located in the County's Angola Neck Sewer Planning Area, as Sussex County has made significant investments in planning and constructed infrastructure to serve the Angola Sewer Planning Area.

**RESPONSE**

The proposed Conditional Use will not provide service to any lands within the Sussex County Engineering Department's Sewer Planning Areas other than those communities that were already approved for such service. Conditions stipulating such have been proposed as a part of the application after review and approval by the County Engineer.

**COMMENT**

Other objections/concerns arise from: 1-Although the proposed service area for this facility is not clearly defined, it appears that wastewater generated from level 4 areas would be pumped into the Environmentally Sensitive Developing District (ESDD);

**RESPONSE**

The proposed service area has been defined and incorporated into the application.

We are not aware that there is any legal or regulatory prohibition against pumping wastewater generated from level 4 areas into the Environmentally Sensitive Developing District (ESDD). In fact, there is not.

**COMMENT**

2 - The proposal makes reference to replacement of failing onsite systems, but an area of failed systems is not defined nor does TESI have a history of participating in septic elimination programs;

**RESPONSE**

The reference to failing septic systems is intended to include any such system that fails within the proposed service area.

**COMMENT**

3 - Item 43 of the application states that "biosolids from wastewater treatment will be removed to the landfill." Should this application be considered for approval, that condition should be attached as a requirement;

**RESPONSE**

We will comply with any condition required by the Sussex County Council

**COMMENT**

4 – The Center for the Inland Bays should be contacted for input regarding possible impacts resulting from such a discharge in close proximity to the Inland Bays.

**RESPONSE**

The Center may be contacted; however, there will be two advertised public hearings where the Center's as well as any other interested party's comments may be heard.

In addition, a Nutrient Balance was performed which indicates that the post nutrient load from the site will be significantly less than that required by DNREC and will result in less nutrients entering the Bay than predevelopment conditions. That report has been included in the application materials submitted to the County.

**COMMENT**

Other comments: Sussex County requires design and construction of the collection and transmission system to meet Sussex County sewer standards and specifications. A review and approval of the treatment and disposal system by the Sussex County Engineering Department is required. A Conditional Use Public Hearing at Sussex County Planning & Zoning may not allow adequate response for the PLUS process. Further, a Conditional Use Public Hearing has been scheduled and advertised for the County Council's meeting.

**RESPONSE**

The design and construction of the collection and transmission system will meet Sussex County sewer standards and specifications.

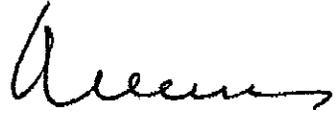
It is understood that review and approval of the treatment and disposal system by the Sussex County Engineering Department is required.

This response to PLUS comments was submitted within the time required by Sussex County for use in both the scheduled Planning and Zoning and County Council hearings.

We thank all involved agencies and personnel for their timely input regarding the Wandendale Regional Wastewater Treatment & Disposal Facility.

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Ms. Constance Holland, AICP  
Response to Agency Comments -- PLUS 2008-05-02  
Wandendale Regional Wastewater Facility

Very truly yours,  
WILSON, HALBROOK & BAYARD, P A.

A handwritten signature in black ink, appearing to read "Dennis L. Schrader".

Dennis L. Schrader, Esquire

DLS/  
Copy: Tidewater Environmental Services, Inc.  
Lawrence B. Lank, Director

# Wandendale

## Regional Wastewater Treatment and Disposal Facility

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June, 2008

### **Executive Summary**

#### **A. Location**

The proposed Wandendale Regional Wastewater Treatment and Disposal Facility is located on both sides of both Rt. 24 and Camp Arrowhead Road south of Love Creek with the bulk of the site on the east side of Rt. 24.

#### **B. Purpose**

The purpose of the proposed Facility is the treatment and land-based irrigation and aquifer recharge of treated wastewater from existing neighborhood homes as well as proposed neighborhoods outside of any existing or proposed Sussex County Sanitary Sewer District or Engineering Department Planning Area. The extension of central wastewater systems in this area to serve failing on-site systems and new development will protect the Inland Bays from excessive amounts of nutrients.

#### **C. Sussex County Zoning**

The proposed facility is currently zoned AR-1, Agricultural Residential District with no change of zone proposed. A Conditional Use permit is required pursuant to Section 115-22 of the Zoning Ordinance for *“Public Utilities...treatment plants, pumping or regulator stations...etc”*.

#### **D. Sussex County Environmentally Sensitive Developing Area Considerations**

The proposed Facility is located within the Environmentally Sensitive Developing Area as defined by the Sussex County Comprehensive Plan currently in effect and is consistent with the Plan as explained by the following excerpts.

- ***“Environmentally Sensitive Developing Area can be defined as a Developing District with special environmental design and protection requirement.”***

The proposed Facility will serve existing, approved neighborhoods, future neighborhoods in the area and has the ability to serve existing, built neighborhoods as well. The Facility has been designed in a fashion that is consistent with or surpasses all DNREC environmental design and protection regulations, and meets the goal to preserve open space.

- ***“Public investment is required in these areas to address ground water pollution from failing septic systems and eutrophication of the Inland Bays from surface water runoff and point source discharges of wastewater.”***

Tidewater Environmental Services, Inc. is a bona fide, state regulated wastewater utility company licensed to own and operate those public utilities in Delaware and other states. It is a well capitalized operation owned by Middlesex Water Company, a well capitalized, publicly traded utility company. Tidewater proposes to build a wastewater treatment and disposal facility with the disposal component being similar to the County’s Inland Bays, Wolf Neck and Piney Neck Regional Wastewater Facilities. Tidewater’s wastewater treatment process design will afford greater control of nutrients with the resulting effluent

# Wandendale

## Regional Wastewater Treatment and Disposal Facility

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nitrogen and phosphorous concentrations consistently below those produced by any of the County lagoon treatment facilities. The Tidewater facility will compliment, but not compete with, the County’s wastewater treatment and disposal facility that will serve the Angola Neck Regional Sanitary District.

- ***“...DNREC adopted...regulations...for...Total Maximum Daily Loads... These regulations propose significant reductions of nitrogen and phosphorous for the tributaries to the Inland Bays...”***

The proposed Facility has been designed in accordance with the On-site Wastewater Treatment & Disposal System Performance Standards for Nitrogen & Phosphorous in DNREC’s proposed regulations in the Pollution Control Strategy for the Indian River, Indian River Bay, Rehoboth Bay and Little Assawoman Bay dated May 2008. The wastewater treatment plant is designed to provide an effluent quality better than the Level 1 Performance Standards for Nitrogen & Phosphorous in those regulations. The treatment facility will produce 40% less TN and 90% less TP than required by the Pollution Control Strategy. The Total N & P leaving the site during full operation is 20% and 21% less, respectively, than existed prior to implementing the full treatment and disposal plan for the Wandendale Regional Wastewater Treatment and Disposal Facility.

**“Extension of the central wastewater systems in this area to serve failing on-site systems and new development will protect the Inland Bays from excessive amounts of nutrients.”**

This Provision of the Comprehensive Plan describes the very purpose of the proposed facility in Sussex County’s own words.

### **E. Land Use**

The following table describes the proposed uses of land on the site:

Total Site	320.21 ac	
Agricultural Spray Area	97.59 ac	(31%)
Forested Spray Area	54.29 ac	(17%)
Rapid Infiltration Basins	19.72 ac	( 6%)
Irrigation Storage Lagoons	12.02 ac	( 4%)
Buildings & Facilities	.48 ac	(.2%)
Roadway, Driveway, Parking	3.11 ac	( 1%)
Woodland, Wetland, Ag Land Preservation	133.00 ac	(41.0%)

### **F. Soils & Hydrogeology**

A Preliminary Soils Reconnaissance (PSR) report was completed for parcels 130, 50, and 48 in December 2006. Additional investigation was performed on Parcel 127 subsequent to the report.

# Wandendale

## Regional Wastewater Treatment and Disposal Facility

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Soil borings were completed in the PSR in the 0-72 inch depth zone and permeability rates were estimated based on hand textures and/or structure and consistence of the least permeable soil evident. These permeability rates are identified in "Design Area" descriptions #A, #B and #C in the report.

A Preliminary Hydrogeologic Evaluation (PHE) report was completed in February 2008 for parcels 50, 127, and 130. Parcel 48 is currently being studied.

A number of tests have been performed including double ring infiltrometer testing which has been completed in a 75' grid pattern in the areas of the potential RIB areas A and B. In addition, the soils scientist has completed field visits with a representative of DNREC for these RIB areas. Additional soil borings and test pits have been conducted in these RIB areas

Continuous wet season monitoring on parcels 50, 127, and 130 for the 2007-2008 wet season, December 1, 2007 through May 15, 2008, has been completed. A mounding analysis has been completed and the site is satisfactory for the proposed use.

### G. Capacity & Phased Operation

The site has the capacity to dispose of 1.12 million gallons per day of wastewater by both spray irrigation and rapid infiltration. The site has sufficient capacity to serve the 1,942 dwelling units for which commitments have been made, the 1429 potential dwelling units for which petitions for service have been requested in the TESI planning area and has reserve capacity for another 400 dwelling units for a total of 3,771 dwelling units to be served.

	<b>Equivalent Dwelling Units (EDUs)</b>	<b>Flow (MGD)</b>
Committed	1,942	0.58
Petitioned	1,429	0.42
Reserve Capacity	400	0.12
Total	3,771	1.12

The dwelling unit capacity was calculated using the 300 gallons per day per dwelling unit set forth in the Sussex County Engineering Department Preliminary Standards and Specifications dated 2005. The number of potential dwelling units for which petitions for service have been made is based on a density of two (2) dwelling units per acre.

TESI's treatment facility will be phased to minimize the flow needed to start-up operation of the facility. The Facility will consist of treatment units constructed in parallel, such that one unit can be placed into operation prior to receiving enough flow to place the entire facility into operation. This approach also gives flexibility to run only one unit during seasonal low flow periods. At the outset, TESI anticipates using a small temporary membrane bio-reactor treatment unit that would only require 15-20 homes to be placed into operation if necessary. The milestones for incremental increases in treatment capacity will be adequate flows for proper operation of the treatment facilities. The permanent treatment facility will consist of two parallel systems, each with the capacity to treat and average daily design flow of 0.56 million gallons per day.

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### H. Other Facts

The following is general information concerning the proposed Facility:

- State & Federal Jurisdictional Wetlands – No disturbance proposed, no permits required.
- 100 Year Flood Plain – No fill or disturbance proposed.
- Buffers – 50' minimum buffer maintained around all spray irrigation areas...sometimes 250' and larger on one side.
- Design Standards – Facilities and infrastructure will be designed in compliance with Sussex County specifications, DNREC's Guidance and Regulations Governing the Land Treatment of Wastes, DNREC's Regulations Governing the Design, Installation and Operations of On-Site Wastewater Treatment and Disposal Systems, DNREC's Large System Siting, Design and Operation Guidelines, and the Great Lakes – Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers Recommended Standards for Wastewater Facilities.
- Water Supply – A central water supply is available to the site from the affiliated water company Tidewater Utilities, Inc.
- The proposed Facility has been designed in accordance with the On-site Wastewater Treatment & Disposal System Performance Standards for Nitrogen & Phosphorous in DNREC's proposed regulations in the Pollution Control Strategy for the Indian River, Indian River Bay, Rehoboth Bay and Little Assawoman Bay dated May 2008. The wastewater treatment process is designed to provide an effluent quality better than the Level 1 Performance Standards for Nitrogen & Phosphorous in those regulations.

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### Statement of Conformity to County Comprehensive Plan

May, 2008

The proposed Conditional Use of the Wandendale Farm for the Wandendale Regional Wastewater Treatment and Disposal Facility is in conformance with the current Sussex County Comprehensive Plan as demonstrated by the following Element-by-Element comparison.

#### **Land Use Element**

Generally, the Land Use Element encourages the centralization of wastewater treatment facilities in areas intended for growth which include the Environmentally Sensitive Developing Area within which most of the Wandendale property is located as well as areas zoned AR-1 adjacent to which the proposed facility is positioned. In addition, with the approval of the Conditional Use Permit, at least two previously approved wastewater treatment facilities intended to be serviced by Tidewater Environmental Services, Inc. may be eliminated to the benefit of future residents of those communities and the environment.

Provisions of the Land Use Element that demonstrate conformity of the proposed Wandendale Conditional Use with the Comprehensive Land Use Plan are as follows:

Stated Goal: *“Direct growth with the provision of public infrastructure and services, and balance growth with the natural environment’s ability to accept it”.*

Paragraph 6: *“Centralization of public infrastructure and services is the desired growth pattern for future development within Sussex County.”*

Paragraph 7: *“The Low Density Area, comprising most of the County, is the agricultural/residential area located generally in the more rural areas of the County. Although the area is intended primarily for agricultural use, low density residential development is permitted.”*

Paragraph 8: *“The purpose of the Land Use Plan is to direct growth in a manner that is cost efficient for public and private investments, and to protect agricultural land and critical natural resources.”*

Paragraph 10: *“Areas designated as Growth Areas include Municipalities, Town Centers, Developing Areas and the Environmentally Sensitive Developing Area.”*

#### **Growth Areas**

##### **Environmentally Sensitive Developing Area**

Paragraph 1: *“Environmentally Sensitive Developing Area can be defined as a Developing District with special environmental design and protection requirement.”*

The proposed Facility will serve both existing approved neighborhoods, existing built neighborhoods and possible future neighborhoods in the area. It has been designed in a fashion that is consistent with or surpasses all environmental design and protection regulations.

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**Paragraph 1:** *“Public investment is required in these areas to address ground water pollution from failing septic systems and eutrophication of the Inland Bays from surface water runoff and point source discharges of wastewater.”*

Tidewater Environmental Services, Inc. is a bona fide, state regulated water and wastewater utility company licensed to own and operate those public utilities in Delaware and other states. It is a well capitalized operation owned by Middlesex Water Company, a well capitalized publicly traded utility company. In a period of reduced County income, as reflected in the FY 2009 “Balanced Progress” budget, there is a unique opportunity for the County to defer, or eliminate, a portion of the estimated \$7,000,000 capital cost projected for the Angola Sewer District by using Tidewater’s proposed Wandendale facility for wastewater treatment and disposal.

**Paragraph 1:** *“...DNREC adopted...regulations...for...Total Maximum Daily Loads... These regulations propose significant reductions of nitrogen and phosphorous for the tributaries to the Inland Bays...”*

The proposed Facility has been designed in accordance with the On-site Wastewater Treatment & Disposal System Performance Standards for Nitrogen & Phosphorous in DNREC’s proposed regulations in the Pollution Control Strategy for the Indian River, Indian River Bay, Rehoboth Bay and Little Assawoman Bay dated May 2008. The wastewater treatment plant is designed to provide an effluent quality better than the Level 1 Performance Standards for Nitrogen & Phosphorous in those regulations. The treatment facility will produce 40% less TN and 90% less TP than required by the Pollution Control Strategy. The Total N & P leaving the site during full operation is 20% and 21% less, respectively, than existed prior to implementing the full treatment and disposal plan for the Wandendale Regional Wastewater Treatment and Disposal Facility.

**Paragraph 4:** *“Extension of the central wastewater systems in this area to serve failing on-site systems and new development will protect the Inland Bays from excessive amounts of nutrients.”*

This point describes the very purpose of the proposed facility in Sussex County’s own words.

### **Mobility Element**

Generally, the only traffic related impact related to the proposed Wandendale facility will be the addition of occasional employee and maintenance and delivery vehicle trips to and from the site. Farming operation related trips are not expected to change. Thus, there will be no impact on the level of service of any related roadway/intersection.

### **Water & Wastewater**

#### **Water & Water Demand**

The importance of the re-use of wastewater for farming and groundwater recharge cannot be overemphasized and is in complete conformance with the Comprehensive Land Use Plan. Re-use of reclaimed wastewater offers the following benefits:

#### **Environment:**

- **Returns reclaimed water to the Inland Bays watershed**
- **Reduces aquifer withdrawal by the amount of reclaimed water applied.**
- **Recharges groundwater aquifers.**

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- Assures perpetual open space for farming and recreation (hunting)
- After nutrient uptake, less nutrient load to Inland Bays

### Farmers:

- Irrigation water delivered to crops.
- Reliable, continuous supply of reclaimed water lowers operations cost (fuel for pumping & fertilizer)
- Makes irrigated land drought resistant.
- Higher yield harvest per acre irrigated vs. non-irrigated.
- Sustains small farms as a way of life.
- Provides permanent jobs in agriculture.

### Government:

- **Centralization of (wastewater) infrastructure and services is the desired pattern of growth for Sussex County-(brackets added)**
- **Enables the elimination of faulty residential wastewater system at little or no cost to taxpayers**
- **Enables cooperation between public and private entities at possible reduced cost to taxpayer**

Provisions of the Water & Wastewater – Water Element that demonstrate conformity of the proposed Wandendale Conditional Use with the Comprehensive Land Use Plan are as follows:

Paragraph 12: “According to information furnished by the Water Resource Division of the United States Geological Survey...stated that the demand for all categories of freshwater use in Sussex County was approximately 93 million gallons per day and nearly 90% of this water is used for industry and irrigation. Although total water is an important consideration, the total water balance is more important. Water used for irrigation is returned to the surface aquifer...Similarly, on-site wastewater systems and treatment facilities using spray irrigation return the water to the aquifer.” (underlining added)

### Wastewater

Regional wastewater treatment facilities with land based disposal/groundwater recharge and crop irrigation capabilities are, potentially, the most important improvement that can be made in Sussex County’s method of managing wastewater from most sources. This is abundantly evident in the Wastewater section of the Comprehensive Plan except that the use of private systems was discouraged at the time of writing. It is important to note, however, that private systems have subsequently come under regulation by the Delaware Public Service Commission which, among other things, requires that operators of such systems be bona fide companies with the financial and managerial strength to run them. Tidewater Environmental Services, Inc. backed by its parent company, Middlesex Water Company is such a company.

Provisions of the Water & Wastewater - Wastewater Element that demonstrate conformity of the proposed Wandendale Conditional Use with the Comprehensive Land Use Plan are as follows:

Paragraph 1: “However, on-site wastewater system failures continue to occur...”

Any failing systems near the Wandendale facility may be able to connect to the system in the future.

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**Paragraph 2:** *“...residential systems without centralized wastewater treatment systems are the source (of nitrate levels in the Inland Bays) in the need of the most immediate attention.”*

The proposed Wandendale facility has been designed in accordance with the On-site Wastewater Treatment & Disposal System Performance Standards for Nitrogen & Phosphorous in DNREC’s proposed regulations in the Pollution Control Strategy for the Indian River, Indian River Bay, Rehoboth Bay and Little Assawoman Bay dated May, 2008. Existing neighborhoods outside the County Planning Area will be or have been approached to connect to the Wandendale system either when constructed (if approved) or at a later date.

### **Municipal Wastewater Treatment Facilities**

Paragraph 8 concerns the disposal of treated effluent from the Rehoboth Beach treatment facility into the Lewes & Rehoboth Canal and the alternative discharge studies that were engaged in at the time of the writing. Since then, the debate has continued with no final decision made by Rehoboth Beach or the County together with Rehoboth Beach.

Suffice it to say that the Wandendale facility, if approved, could provide a complete or partial alternative solution for land based disposal of treated effluent from the Rehoboth facility returning billions of gallons of water to crops and, ultimately, the underlying aquifer.

### **Conservation Element**

Generally, the Conservation Element addresses identification and protection of critical natural resources in the County. Strategies to accomplish this are mentioned together with a map identifying Protected Lands and Potentially Protected Lands; Love Creek adjacent to which the disposal area for the proposed Wandendale facility is located is one such Potentially Protected Land. It is clear that the proposed Wandendale facility is in conformance with the Conservation Element of the Comprehensive Land Use Plan based on the following points:

- The proposed treatment plant, storage lagoon and ancillary buildings are across Rt. 24 from Love Creek, almost 6,500 feet away.
- Proposed rapid infiltration basins are 5,200 and 2,800 feet away from Love Creek with a preserved farming area of 200’ acting as a buffer between the basins and the creek.
- A buffer of existing forested area of 50 feet in width will be maintained between all facilities and farming operations.
- No impact to either riparian tidal or non-tidal wetlands is proposed.

### **Recreation & Open Space Element**

The proposed Wandendale facility includes 133 acres of Woodland, Wetland and Agricultural land preservation; over 40% of the entire site. In addition, under lease arrangements with the land owner, the entire site with the exception of the buildings, RIBs and lagoon areas are available to the landowner for continued hunting which has been an on-going activity for many years. The preservation of these lands

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and activities are in accordance with the stated goal of the Recreation & Open Space Element of the Comprehensive Land Use Plan.

Provisions of the Recreation & Open Space Element that demonstrate conformity of the proposed Wandendale Conditional Use with the Comprehensive Land Use Plan are as follows:

**Stated Goal:** *“Provide Passive and Active Recreational Facilities for the benefit of Sussex County’s Residents and Visitors.”*

As previously stated, over 40% of the site is being preserved as open space and all of the site, except for the buildings, RIBs and lagoons, is permanently available for Landowner and guest hunting.

### **Recreation and Open Space Growth Management Strategies**

**Paragraph 16, bullet point D:** **“Coordinate the development and maintenance of recreation and open space opportunities for resident and visitor enjoyment, and economic growth, in a manner that ensures environmental conservation.”**

The proposed Wandendale facility includes 133 acres of Woodland, Wetland and Agricultural land preservation; over 40% of the entire site. In addition, under lease arrangements with the land owner, the entire site with the exception of the buildings, RIBs and lagoon areas are available to the landowner for continued hunting which has been an on-going activity for many years, thus accomplishing this strategy with regard to this site.

**Paragraph 16, bullet point g:** **“Coordinate the planning of water and wastewater systems to enhance existing and future recreational opportunities, while protecting the environment by directing growth away from sensitive natural areas.”**

This strategy is accentuated on this site by coordinating the location of a regional facility while preserving wetlands and woodlands along Love Creek, an area identified on the Conservation & Recreation Plan as “Potential Protected Lands”. This may allow the eventual connection of the remainder of the lands abutting Love Creek in a green corridor or buffer of preserved and protected areas.

### **Housing Element**

Not Applicable

### **Intergovernmental Coordination Element**

Not Applicable

### **Community Design Element**

Not Applicable

### **Historic Preservation Element**

Not Applicable

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### **Economic Development Element**

The proposed Wandendale facility is based on a land lease allowing the continued agricultural use of the property and, in fact, enhancing that use through the delivery of a consistent source of irrigation water promoting sustainable farming by lowering farm expenses and causing higher crop yields while providing:

Decreases fuel cost to pump water out of the ground,

Irrigation water delivered to crops,

A reliable, continuous supply of reclaimed water (thus making farm land drought resistant),

Cash flow from the irrigation lease.

The effects described above are in direct conformance with the Economic Development Element of the Comprehensive Land Use Plan:

**Stated Goal:** *“Direct Public and Private Investment in a manner, which promotes growth and economic stability.”*

This Element of the plan goes on to state more specifically:

*“It is important for the County to recognize that agriculture is not only a land use, it is also an industry, and protection and expansion of this industry must continue to be a priority of the County. In accomplishing this objective, the County must look for ways to attract and promote new agricultural related industries as well as other business enterprises which are compatible with farming activities.”*

(underlining added)

It is clear that the coupling of wastewater treatment with the provision of utilizing reclaimed water to irrigate preserved farmland with the addition of income to the farm from the lease is one such business.