



STATE OF DELAWARE
EXECUTIVE DEPARTMENT
OFFICE OF STATE PLANNING COORDINATION

September 22, 2015

Mr. Frank Kea, RLA
Solutions IPEM
303 North Bedford St.
Georgetown, DE 19941

RE: PLUS review 2016-08-02; Branch Oaks

Dear Frank,

Thank you for meeting with State agency planners on August 24, 2016 to discuss the proposed plans for the Branch Oaks project. According to the information received, you are seeking review of a site plan for 20 residential units on 4.77 acres in Sussex County.

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 Sussex 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.**

Strategies for State Policies and Spending

This project is located in Investment Level 2 according to the *Strategies for State Policies and Spending*. Investment Level 2 reflects areas where growth is anticipated by local, county, and State plans in the near term future.

Code Requirements/Agency Permitting Requirements

Department of Transportation – Contact Bill Brockenbrough 760-2109

- The site access on Munchy Branch Road (Sussex Road 270A) must be designed in accordance with DelDOT's Development Coordination Manual. A copy of the Manual is available at <http://www.deldot.gov/information/business/subdivisions/changes/index.shtml>.

- Pursuant to Section P.3 of the Manual, a Pre-Submittal Meeting is recommended before plans are submitted for review. A Pre-Submittal Meeting was held on July 26, 2016. Determinations and requirements from that meeting are reflected in these comments.
- Section P.5 of the Manual addresses fees that are assessed for the review of development proposals. DelDOT anticipates collecting the Initial Stage Fee when the record plan is submitted for review and the Construction Stage Fee when construction plans are submitted for review.
- Per Section 2.2.2.1 of the Manual, Traffic Impact Studies (TIS) are warranted for developments generating more than 500 vehicle trip ends per day or 50 vehicle trip ends per hour in any hour of the day. From the PLUS application, we see that the total daily trips are estimated at 191 vehicle trip ends per day. Based on that traffic volume, a TIS is not warranted for this development and DelDOT does not anticipate requiring one.
- Per Section 2.3.2 of the Manual, DelDOT may require a Traffic Operational Analysis (TOA) for any development generating 200 or more vehicle trip ends per day. From the PLUS application, DelDOT sees that the total daily trips are estimated at 191 vehicle trip ends per day. Based on that traffic volume, DelDOT does not anticipate requiring a TOA.
- Section 3.2.4.2 of the Manual addresses the placement of right-of-way monuments (markers) along the roads on which a property fronts, in this case Munchy Branch Road. Monuments sufficient to re-establish the permanent rights-of-way after the dedication discussed below should be shown on the plan and provided in the field in accordance with this section.
- As necessary, in accordance with Section 3.2.5 and Figure 3.2.5-a of the Manual, DelDOT will require dedication of right-of-way along the site's frontage on Munchy Branch Road. By this regulation, this dedication is to provide a minimum of 30 feet of right-of-way from the road centerline. The following right-of-way dedication note is required, "**An X-foot wide right-of-way is hereby dedicated to the State of Delaware, as per this plat.**"
- In accordance with Section 3.2.5.1.1 of the Manual, if this development is proposing a neighborhood sign/structure, then a permanent easement shall be established at the entrance. The easement shall be located outside of any existing and/or proposed right-of-way. It will also need to be verified that the sign/structure does not pose a sight distance and/or safety hazard.
- In accordance with Section 3.2.5.1.2 of the Manual, DelDOT will require the establishment of a 15-foot wide permanent easement across the property frontage on Munchy Branch Road. The location of the easement shall be outside the limits of the ultimate right-of-way. The easement area can be used as part of the open space

calculation for the site. The following note is required, “**A 15-foot wide permanent easement is hereby established to the State of Delaware, as per this plat.**”

- In accordance with Section 3.4 of the Manual, a record plan shall be prepared prior to issuing “Letter of No Objection”. The following information will be required for the “Letter of No Objection” review:
 - Initial Stage Fee Calculation Form
 - Initial Stage Review Fee
 - Gate-Keeping Checklist – Site Plan
 - Design Checklist - Record Plan
 - Sight Distance Spreadsheet
 - Owners and Engineers’ name and e-mail address
 - Record Plan
 - Conceptual Entrance Plan
 - Submission of the Area-Wide Study Fee (If applicable)
- Referring to Section 3.4.2.1 of the Manual, the following items, among other things, are required on the Record Plan:
 - A Traffic Generation Diagram. See Figure 3.4.2-a for the required format and content.
 - All adjacent existing features are required to be shown in accordance with Figure 3.4.2-b.
 - Notes identifying the type of off-site improvements, agreements (signal, letter) contributions and when the off-site improvements are warranted.
- Section 3.5 of the Manual provides DelDOT’s requirements with regard to connectivity. The requirements in Sections 3.5.1 through 3.5.3 shall be followed for all development projects having access to state roads or proposing DelDOT maintained public road for subdivisions. Private or municipal streets should follow the local land use agency’s requirements for connectivity.
- Section 3.5.4.2 of the Development Coordination Manual addresses requirements for shared-use paths and sidewalks. Projects located in Level 1 and 2 Investment Areas are required to install a shared-use path or sidewalk along the State-maintained road frontage. The Subdivision Engineer may waive the requirement where a physical impossibility exists. The existing roadway configuration will not allow for safe termination of a path or sidewalk. Therefore, in lieu of a path or sidewalk this project will be required to construct a five-foot wide shoulder for the length of the project frontage on Munchy Branch Road.

- Consistent with Section 3.5.5 of the Manual, any existing or proposed transit stops shall be shown on the Record Plan with applicable bicycle and pedestrian connectivity.
- In accordance with Section 3.8 of the Development Coordination Manual, storm water facilities, excluding filter strips and bioswales, shall be located a minimum of 20 feet from the ultimate State right-of-way along Munchy Branch Road.
- Referring to Section 4.3 of the Manual, an entrance plan shall be prepared prior to issuing entrance approval. The following information will be required for Entrance Plan review:
 - Construction Stage Fee Calculation Form
 - Construction Review Fee
 - Gate-Keeping Checklist – Entrance Plan
 - Design Checklist - Entrance Plan
 - Auxiliary Lane Spreadsheet
 - Entrance Plan
 - Pipe/Angle Spreadsheet (If applicable)
 - SWM Report and Calculations (If applicable)
- In accordance with Section 5.2.5.6 of the Manual, a separate turning template plan shall be provided to verify vehicles can safely enter and exit the site entrance. As per Section 5.2.3 of the Manual, the entrance shall be designed for the largest vehicle using the entrance.
- In accordance with Section 5.2.9 of the Manual, the Auxiliary Lane Worksheet should be used to determine whether auxiliary lanes are warranted at the site entrance and how long those lanes should be. The worksheet can be found at http://www.deldot.gov/information/business/subdivisions/auxiliary_lane_worksheet.xls. Application of the Worksheet has shown that a left turn lane entering the site is warranted. Given the existing roadway configuration and project location the requirement for a left turn lane has been waived.
- In accordance with Section 5.4 of the Manual, sight distance triangles are required and shall be established in accordance with American Association of State Highway and Transportation Officials (AASHTO) standards. A spreadsheet has been developed to assist with this task. It can be found at <http://www.deldot.gov/information/business/subdivisions/Intersection-Sight-Distance.xls>.
- In accordance with Section 5.14 of the Manual, all existing utilities must be shown on the plan and a utility relocation plan will be required for any utilities that need to be relocated.

- Because the proposed development would not have State-maintained streets, Section 6.4.3 of the Manual, which pertains to the inspection and acceptance of commercial entrances, applies. Construction inspection responsibilities shall be in accordance with Figure 6.4.3-a. Our preliminary reading of this figure is that the project requires Level I inspection and that a construction inspection agreement will not be needed.
- Section 7.7.2 of the Manual addresses the need to provide 20-foot wide drainage easements for all storm drainage systems, open or closed, that fall outside the existing right-of-way or the drainage/utility easement. In accordance with this section, metes and bounds and total areas need to be shown for any drainage easements. The easements should be shown and noted on the record plan.

Department of Natural Resources and Environmental Control – Michael Tholstrup 735-3352

Executive Summary

The proposed development will result in increased impervious surface and new sources of greenhouse gas emissions. Opportunities exist to preserve natural resources while reducing the environmental impact on-site. As discussed at the PLUS meeting, the Department recommends minimizing the amount of tree clearing and increasing buffers adjacent to the wetlands to protect water quality and maintain wildlife habitat.

The State of Delaware is threatened by climate change and has a goal of reducing greenhouse gas emissions by 30 percent by 2030. Appropriate development and re-development that provides access to public transportation, opportunities to walk and bike to shopping and recreation, and that employs energy efficient building standards are among key strategies to meet these goals. DNREC encourages the use of high performance building standards and consideration of alternative energy sources to promote clean sustainable energy and reduce greenhouse gas emissions. This could mean siting the buildings to take advantage of solar and geothermal systems, and/or including infrastructure for electric vehicle charging stations. We further recommend an abundant use of native vegetation and shade trees throughout the landscape, as well as pervious pavement and green infrastructure, where practicable, to absorb carbon dioxide, protect water quality and provide relief to residents on hot days.

The following pages provide information about applicable regulations and detailed recommendations associated with this project, from various DNREC Divisions. DNREC would like to be a partner in creating appropriate development that protects and highlights the environment as a natural amenity of the landscape. The Department has resources and expertise that are available to help make this a reality, often at no expense to the landowner.

TMDLs

- The project is located in the *low nutrient reduction* zone of the greater Inland Bays watershed. In this watershed, Total Maximum Daily Load (TMDL) pollutant reduction targets have been developed by the State of Delaware (under the auspices of Section

303(d) of the 1972 Federal Clean Water Act) for nutrients (e.g., nitrogen, phosphorus), and bacteria. The TMDL for the *low reduction* zone of the Inland Bays watershed calls for 40 percent reduction in nitrogen and phosphorus from baseline conditions. The TMDL also calls for a 40 percent reduction (17 percent for marine waters) in bacteria from baseline conditions. A TMDL is the maximum level of pollution allowed for a given pollutant below which a “water quality limited waterbody” can assimilate and still meet State water quality standards (e.g., dissolved oxygen, nutrients, and bacteria; *State of Delaware Surface Water Quality Standards, as amended July 11, 2004*) to the extent necessary to support use goals such as, swimming, fishing, drinking water and shell fish harvesting. Please view the following web link for further information on the regulatory requirements and technical analysis involved in the development of the specific TMDLs:

<http://www.dnrec.delaware.gov/swc/wa/Pages/WatershedAssessmentTMDLs.aspx>

- The Inland Bays Pollution Control Strategy (PCS) and the accompanying regulations were finalized by order of the DNREC Secretary on October 2008. The PCS regulations can be reviewed at <http://regulations.delaware.gov/documents/November2008c.pdf>. Background information about the PCS with guidance documents and mapping tools can be retrieved here:
http://www.dnrec.state.de.us/water2000/Sections/Watershed/ws/ib_pcs.htm

Water Supply

- The project information sheets state water will be provided to the project by Tidewater Utilities via a public water system. DNREC 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 take approximately four weeks to process, which allows the necessary time for technical review and advertising. Should you have any questions concerning these comments, please contact Rick Rios, at (302) 739-9944.

Sediment and Erosion Control/Stormwater Management

- 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. 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 the Sussex Conservation District at (302) 856-7219 for details regarding submittal requirements and fees.

Air Quality

- The applicant shall comply with all applicable Delaware air quality regulations. Please note that the following regulations in Table 1 – Potential Regulatory Requirements may apply to your project:

Table 1: Potential Regulatory Requirements	
Regulation	Requirements
7 DE Admin. Code 1106 - Particulate Emissions from Construction and Materials Handling	<ul style="list-style-type: none"> • Use dust suppressants and measures to prevent transport of dust off-site from material stockpile, material movement and use of unpaved roads. • Use covers on trucks that transport material to and from site to prevent visible emissions.
7 DE Admin. Code 1113 – Open Burning	<ul style="list-style-type: none"> • Prohibit open burns statewide during the Ozone Season from May 1-Sept. 30 each year. • Prohibit the burning of land clearing debris. • Prohibit the burning of trash or building materials/debris.
7 DE Admin. Code 1135 – Conformity of General Federal Actions to the State Implementation Plan	<ul style="list-style-type: none"> • Require, for any “federal action,” a conformity determination for each pollutant where the total of direct and indirect emissions would equal or exceed any of the de minimus levels (See Section 3.2.1)
7 DE Admin. Code 1141 – Limiting Emissions of Volatile Organic Compounds from Consumer and Commercial Products	<ul style="list-style-type: none"> • Use structural/ paint coatings that are low in Volatile Organic Compounds. • Use covers on paint containers when paint containers are not in use.
7 DE Admin. Code 1144 – Control of Stationary Generator Emissions	<ul style="list-style-type: none"> • Ensure that emissions of nitrogen oxides (NO_x), non-methane hydrocarbons (NMHC), particulate matter (PM), sulfur dioxide (SO₂), carbon monoxide (CO), and carbon dioxide (CO₂) from emergency generators meet the emissions limits

	<p>established. (See section 3.2).</p> <ul style="list-style-type: none"> • Maintain recordkeeping and reporting requirements.
<p>7 DE Admin. Code 1145 – Excessive Idling of Heavy Duty Vehicles</p>	<ul style="list-style-type: none"> • Restrict idling time for trucks and buses having a gross vehicle weight of over 8,500 pounds to no more than three minutes.

For a complete listing of all Delaware applicable regulations, please look at our website: <http://www.awm.delaware.gov/AQM/Pages/AirRegulations.aspx>.

Tank Management Section.

- If a release of a Regulated Substance occurs at the proposed project site, compliance with 7 Del.C., Chapter 60, 7 Del.C., Chapter 74; and DE Admin. Code 1351, State of Delaware *Regulations Governing Underground Storage Tank Systems* (the UST Regulations) is required.
- No environmental impacts are anticipated; however, per the **UST Regulations: Part E, § 1. Reporting Requirements**: Any indication of a Release of a Regulated Substance that is discovered by any Person, including but not limited to environmental consultants, contractors, utility companies, financial institutions, real estate transfer companies, UST Owners or Operators, or Responsible Parties shall be reported within 24 hours to:
 - The Department’s 24-hour Release Hot Line by calling (800) 662-8802; and
 - The DNREC, Tank Management Section by calling (302) 395-2500.

State Historic Preservation Office – Contact Terrence Burns 736-7404

- There are no known archaeological sites or National Register listed property, on this parcel. However, on the adjacent parcel towards the west side is the Webb-Postles Family Cemetery (K-4823), and the adjacent parcel towards the north is the T. Short House (K-4951). With this in mind, the developer should be aware of the Unmarked Human Burials and Skeletal Remains Law, in Chapter 54, of Title 7, of the Delaware Code.

Abandoned or unmarked family cemeteries are very common in the State of Delaware. They are usually in rural or open space areas, and sometimes near or within the boundary of an historic farm site. Even a marked cemetery can frequently have unmarked graves or burials outside of the known boundary line or limit. Disturbing unmarked graves or burials triggers the Delaware’s Unmarked Human Burials and Human Skeletal Remains Law (7 Del. C. Ch. 54), and such remains or discoveries can result in substantial delays while the procedures required under this law are carried out. If there is a discovery of any unmarked graves, burials or a cemetery, it is very costly to have them archaeologically excavated and the burials moved. The Division of Historical & Cultural Affairs

recommends that owners and/or developers have a qualified archaeological consultant investigate their project area, to the full extent, to see if there is any unmarked cemetery, graves, or burial sites. In the event of such a discovery, the Division of Historical & Cultural Affairs also recommends that the plans be re-drawn to leave the full extent of the cemeteries or any burials on its own parcel or in the open space area of the development, with the responsibility for its maintenance lying with the landowner association or development. If you would like to know more information pertaining to unmarked human remains or cemeteries, please go to the following websites for additional information: www.history.delaware.gov/preservation/umhr.shtml and www.history.delaware.gov/preservation/cemeteries.shtml.

Prior to any demolition or ground-disturbing activities, the developer should hire an archaeological consultant, to examine the parcel for archaeological resources and plan to avoid those areas. If there is any federal involvement with the project, in the form of licenses, permits, or funds, the federal agency through its client, is responsible for complying with Section 106 of the National Historic Preservation Act (36 CFR 800) and must consider their project's effects on any known or potential cultural or historic resources. Owners and developers who may plan to apply for an Army Corps of Engineers permit or for federal funding, such as HUD or USDA grants, should be aware of the National Historic Preservation Act of 1966 (as amended). Regulations promulgated for Section 106 of this Act stipulate that no ground-disturbing or demolition activities should take place before the Corps or other involved federal agency determines the area of potential effect of the project undertaking. These stipulations are in place to allow for comment from the public, the Delaware State Historic Preservation Office, and the Advisory Council for Historic Preservation about the project's effects on historic properties. Furthermore, any preconstruction activities without adherence to these stipulations may jeopardize the issuance of any permit or funds. If you need further information or additional details pertaining to the Section 106 process and the Advisory Council's role, please review the Advisory Council's website at www.achp.gov.

Sussex County – Contact Janelle Cornwell 855-7878

- The project is within the boundary of the Sussex County Unified Sanitary Sewer District and connection to the sewer system is mandatory. Sewer capacity is available on the basis of 4.0 EDU per acre (4.0 EDU x 4.77 acres = 19.08 EDU of available capacity). As proposed at 20 total units on 4.77 total acres, the project slightly exceeds sewer system design assumptions. A sewer connection point has been provided in Munchy Branch Road.
- Sussex County requires design and construction of the collection and transmission system to meet Sussex County Engineering Department's requirements and procedures. The Sussex County Engineer must approve the connection point. A sewer concept plan must be submitted for review and approval prior to any sewer construction. Attached is a checklist for preparing sewer concept plans.

- One time system connection charges will apply. Please contact Mrs. Christine Fletcher at 302 854-5086 for additional information on charges.

Recommendations/Additional Information

This section includes a list of site specific suggestions that are intended to enhance the project. These suggestions have been generated by the State Agencies based on their expertise and subject area knowledge. **These suggestions do not represent State code requirements.** They are offered here in order to provide proactive ideas to help the applicant enhance the site design, and it is hoped (**but in no way required**) that the applicant will open a dialogue with the relevant agencies to discuss how the suggestions can benefit the project.

Department of Transportation – Contact Bill Brockenbrough 760-2109

- The applicant should expect a requirement that any substation and/or wastewater facilities will be required to have access from the internal driveway with no direct access to Munchy Branch Road.
- The applicant should expect a requirement that all PLUS and Technical Advisory Committee (TAC) comments be addressed prior to submitting plans for review.
- Please be advised that DelDOT adopted an update of the Development Coordination Manual effective April 11, 2016. While in most respects, the changes are incremental, they are located throughout the Manual and could have some effect on the entrance designs.
- Please be advised that as of August 1, 2015, all new plan submittals and re-submittals, including major, minor and commercial plans, shall now be uploaded via the PDCA (Planning Development Coordination Application) with any review fee paid online via credit card or electronic check. Guidance on how to do this is available on the DelDOT website at <http://www.deldot.gov/information/business/subdivisions/>
- Be advised that the Standard General Notes have been updated and posted to the DelDOT website. Please begin using the new versions and look for the revision date of July 20, 2016. The notes can be found at http://www.deldot.gov/information/business/subdivisions/Sheet_Notes.doc?052316.

Department of Natural Resources and Environmental Control – Michael Tholstrup 735-3352

Flooding and Sea Level Rise

- Portions of the planned development area lie within an area that will be subject to direct and permanent inundation from sea level rise (<http://de.gov/slrmap>). Lots along the Munchy Branch wetland and stream are projected to be more vulnerable over time to daily high tides, storms, flooding and high tides.

- Sea levels in Delaware have risen by about a foot over the past century (NOAA, 2014). This rate of sea level rise is likely to accelerate in the coming decades as a result of global climate change and local subsidence. Accelerated sea level rise will result in permanent flooding of low-lying coastal areas and increased risk of flood damage during storms (DNREC, 2012).
- DNREC Preliminary Land Use Service maps depicting future inundation risk from sea level rise indicate that approximately .59 acres of this site out of 5.36 acres or 11 percent could be inundated by sea level rise of 1.5 meters. In the short-term, sea level rise on this parcel, combined with periodic coastal flooding events, may result in repetitive flood damage to roads and significant difficulties maintaining storm water, drainage and other infrastructure. In the long-term, this increased flood and inundation risk could result in costly public and private flood abatement and drainage projects and an eventual abandonment of structures.

DNREC recommends:

- Lots within flood prone areas should be eliminated.
- Any structures that are built within an area mapped as both floodplain and sea level rise zone should be constructed with 18” of freeboard plus additional freeboard to accommodate future sea levels.
- Filling lots to elevate them to above base flood elevation is discouraged.
- Access roads should be designed to be flood resilient for the entirety of your project’s design life span. This includes ensuring that the roadway functions for the 1% chance flood plus anticipated future sea level rise.

References:

- NOAA (National Oceanic and Atmospheric Administration). (2014). Mean Sea Level Trend, Lewes, DE. Retrieved from http://tidesandcurrents.noaa.gov/sltrends/sltrends_station.shtml?stnid=8557380.
- DNREC Delaware Coastal Programs. (2012). Preparing for Tomorrow’s High Tide: Sea Level Rise Vulnerability Assessment for the State of Delaware. Dover, DE: Department of Natural Resources and Environmental Control. Retrieved from <http://de.gov/slrva>.

Soils Assessment

- Based on soils survey mapping update Greenwich-Urban land complex (GuB; 0-5 percent slopes), Longmarsh (LO) and Evesboro (EvD; 5 to 15 percent slopes) are the primary soil mapping units mapped on subject parcel. Greenwich-Urban land complex is well-drained soil mapping units that has been modified through cutting and filling by heavy equipment. Longmarsh is a very poorly-drained wetland associated (hydric) soil mapping unit that has severe limitations for development due to a high seasonal high water table. Evesboro is an excessively well-drained soil with limitations due to steeply-sloping topography (Figure 1). DNREC strongly advises refraining from development in the

Longmarsh soil mapping unit and limiting development in the Evesboro soil mapping unit where slopes exceed 10 percent.

DNREC strongly discourages building on hydric soils because they are functionally important source of water storage (functions as a “natural sponge”); the loss of water storage through excavation, filling, or grading of intact native hydric soils increases the probability for more frequent and destructive future flooding events. The probability for flooding is compounded by increases in surface imperviousness as building density in the area increases over time. Moreover, destruction of hydric soils increases the amount pollutant runoff (i.e., hydric soils sequester and detoxify pollutants) which contributes to lower water quality in regional waterbodies and wetlands.

It is recommended that the applicant contact a licensed (Delaware Class D) soil scientist to make a site specific assessment (i.e., soil survey mapping) of the soils on this site and avoid building on hydric soils) of the soils in this parcel and a field-based delineation of the hydric soils and/or wetlands. According to information presented in the PLUS application, a wetland delineation has not been conducted to date. A list of licensed soil scientists can be obtained from the Ground Water Discharges Branch; the Branch can be reached by phone at 739-9947.

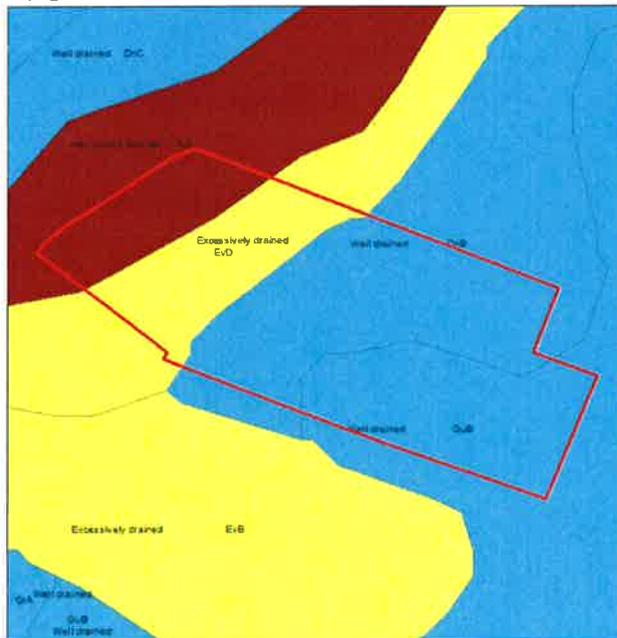
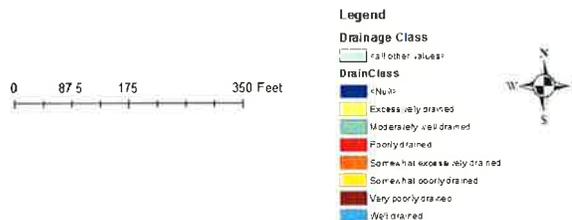


Figure 1 NRCS soil survey mapping update in the immediate vicinity of the proposed construction



Wetland Buffers

- The proposed 20-foot buffer to the wetlands on site are not adequate. The buffer should be expanded to at least 100 feet, not only to protect the function and integrity of the wetlands, but also to ensure that this open space area can actually be used by wildlife, as is suggested on the PLUS application. A 20-foot buffer is also not suitable for wildlife. Lot lines, roadways, and infrastructure should not be placed within this buffer zone. Buffers are an integral component of aquatic and wetland habitats, reducing the amount of sediments, pollutants, and other non-point source material that may affect the function and integrity of habitat and the condition and survivability of aquatic organisms.

Forest Preservation

- Given the benefit of trees in erosion control and flood abatement, tree removal for stormwater management should be avoided. This could include site plan reconfiguration to locate stormwater management facilities to non-forested areas or employing alternative methods that do not require tree removal. Options should be discussed with project engineers or with the appropriate Sediment and Stormwater Plan approval agency.

Additional information on TMDLs and water quality

- Compliance with the specified TMDL nutrient and bacterial reduction requirements specified for the Inland Bays watershed can be facilitated by adherence to the strategies and requirements described in the Inland Bays PCS, and the implementation of the following recommended BMPs, which would:
 - Preserve and/or maintain as much of the existing forested area as possible. Given the environmental sensitivity (e.g., water quality and wildlife habitat) of the greater Inland Bays watershed, the Division of Watershed Stewardship strongly opposes the applicant's plan to remove nearly all of forested acreage (approximately 2.1 of 2.8 total forested acres) to accommodate this development. DNREC believes, given the environmental sensitivity (both water quality and habitat) of this watershed, that the existing forested acreage should remain intact or undeveloped.
 - Additional native tree, shrub and/or native herbaceous vegetation plantings in areas of open space, wherever possible.
 - Maintain a vegetated buffer of at least 100 feet from the adjoining wetlands and waterbodies. Based on a review of existing buffer research by Castelle et al. (Castelle, A. J., A. W. Johnson and C. Conolly. 1994. Wetland and Stream Buffer Requirements – A Review. J. Environ. Qual. 23: 878-882.), an adequately-sized buffer that effectively protects wetlands and streams, in most circumstances, is about 100 feet in width. In recognition of this research and the need to protect water quality, the Watershed Assessment Section recommends that the applicant maintain/establish this buffer (planted in native vegetation) from all waterbodies

- and all wetlands (i.e., a USACE approved field wetlands delineation for non-tidal wetlands and State approved wetlands delineation for tidal wetlands).
- Calculate post-construction surface imperviousness with all forms of created (or constructed) surface imperviousness (e.g., rooftops, driveways, parking lots, sidewalks, open-water storm water management structures, ponds, and roads) included in the calculation. Omission of any of the above-stated forms of surface imperviousness will result in an underestimate of the actual post-development surface imperviousness and the associated environmental impacts.
 - Employ green-technology storm water management and a rain garden(s) (in lieu of open-water management structures) as BMPs to mitigate or reduce nutrient and bacterial pollutant runoff. Please contact Lara Allison at (302) 739-9939 for further information about the possibility for installing rain gardens on this parcel.
 - Use pervious paving materials (when compatible with local ordinances such as source water protection, fire marshal codes, and/or sediment and stormwater regulations) instead of conventional paving materials to help reduce the amount of water and pollutant runoff draining to adjoining streams and wetlands. Pervious pavers are especially recommended for areas designated for parking.
 - Assess nutrient and bacterial pollutant loading at the preliminary project design phase. To this end, the Watershed Assessment Section has developed a methodology known as the “Nutrient Load Assessment protocol.” The protocol is a tool used to assess changes in nutrient loading (e.g., nitrogen and phosphorus) resulting from the conversion of individual or combined land parcels to a changed land use; thus providing applicants and governmental entities with quantitative information about the project’s impact(s) on baseline water quality. DNREC strongly encourages the applicant/developer use this protocol to design and implement the most effective BMPs. Please contact John Martin or Jen Walls in the Division of Watershed Stewardship, at (302) 739-9939 for more information.

Additional information on tank management.

- When contamination is encountered, PVC pipe materials should be replaced with ductile steel and nitrile rubber gaskets in the contaminated areas.
- If any aboveground storage tanks (ASTs) less than 12,500 gallons are installed, they must be registered with the TMS. If any ASTs greater than 12,500 gallons are installed, they are also subject to installation approval by the TMS.
- DNREC-TMS encourages the use of Best Management Practices (BMPs) in considering all environmental effects of activities and implementation and incorporating options to minimize the environmental footprints of activities. For more information, please visit online: <http://www.dnrec.delaware.gov/tanks/Pages/default.aspx> or contact Ross D. Elliott at DNREC-TMS with further questions at (302)-395-2500, or by email: Ross.Elliott@state.de.us

Additional information on hazardous waste sites

- SIRS strongly recommends that the land owner perform environmental due diligence of the property by performing a Phase I Environmental Site Assessment (including a title search to identify environmental covenants) in accordance to Section 9105(c) (2) of the Delaware Hazardous Substance Cleanup Act (HSCA). While this is not a requirement under HSCA, it is good business practice and failure to do so will prevent a person from being able to qualify for a potential affirmative defense under Section 9105(c) (2) of HSCA.
- Additional remediation may be required if the project property or site is re-zoned by the county.
- Should a release or imminent threat of a release of hazardous substances be discovered during the course of development (e.g., contaminated water or soil), construction activities should be discontinued immediately and DNREC should be notified at the 24-hour emergency number (800) 662-8802. SIRS should also be contacted as soon as possible at (302) 395-2600 for further instructions.

Additional information on air quality

- There is an opportunity to connect to a larger bicycle and pedestrian network and it is recommended that both DelDOT and the applicant pursue the opportunity to connect missing links in the existing bicycle/pedestrian and sidewalk network in the near future in order to promote alternative travel methods in the area that reduce dependency on vehicular travel and encourage multi-modal transportation efforts. The parcel slated for development is also located within walking distance and less than a mile from the nearest transit center/bus stop along Coastal Highway (Route 1).
- DNREC encourages developers and builders to consider all sustainable growth practices in their design, and we believe that the air quality impacts associated with the project should be completely considered. New homes and businesses may emit, or cause to be emitted, additional air contaminants into Delaware's air, which will negatively impact public health, safety and welfare. These negative impacts are attributable to:
 - Emissions that form ozone and fine particulate matter; Sussex County is in violation of the 2008 ozone standard.
 - The emission of greenhouse gases which are associated with climate change, and
 - The emission of air toxics.
- Air emissions generated from new homes and businesses include emissions from the following activities:
 - Area sources such as painting, maintenance equipment and the use of consumer products like roof coatings and roof primers.
 - The generation of electricity, and
 - All transportation activity.

-
- DNREC encourages sustainable growth practices that:
 - Control sprawl;
 - Preserve rural and forested areas;
 - Identify conflicting land use priorities;

 - Encourage growth on previously developed sites and denser communities while at the same time protect our diminishing land base;
 - Coordinate transportation, housing, environment, and climate protection plans with land use plans; and
 - Demonstrate that communities can achieve the qualities of privacy, community, and contact with nature without degrading the natural environment or generating unacceptable environmental costs in terms of congestion, use of natural resources, or pollution.

- Based on the information provided, the three air emissions components (i.e., area, electric power generation, and mobile sources) were quantified. Table 2 – Projected Air Quality Emissions represents the actual impact the Branch Oak development may have on air quality.

Table 2: Projected Air Quality Emissions for Branch Oaks Development					
Emissions Attributable to Branch Oaks (Tons per Year)	Volatile Organic Compounds (VOC)	Nitrogen Oxides (NOx)	Sulfur Dioxide (SO ₂)	Fine Particulate Matter (PM _{2.5})	Carbon Dioxide (CO ₂)
Area source emissions	0.6	0.1	0.1	0.1	2.5
Power emissions	*	0.2	0.9	*	125.9
Mobile emissions	0.9	1.0	0.0	0.0	591.1
Total emissions	1.5	1.3	1.0	0.1	719.5

(*) Indicates data is not available.

****Note that emissions associated with the actual construction of the apartment community, including automobile and truck traffic from working in, or delivering products to the site, as well as site preparation, earth moving activities, road paving and other miscellaneous air emissions, are not reflected in the table above.****

- Additional measures may be taken to substantially reduce the air emissions identified above. These measures include:
 - **Constructing with only energy efficient products.** Energy Star qualified products are up to 30 percent more energy efficient. Savings come from building envelope upgrades, high performance windows, controlled air infiltration, upgraded heating and air conditioning systems, tight duct systems and upgraded water-heating equipment. Every percentage of energy efficiency translates into a percent reduction in pollution. The Energy Star Program is an excellent way to save on energy costs and reduce air pollution.
 - **Offering geothermal and/or photo voltaic energy options.** These systems can significantly reduce emissions from electrical generation and from the use of oil or gas heating equipment.
 - **Constructing with high albedo, high solar reflectance materials.** This includes roofing and hardscape. These materials help to reduce heat island impacts and, by extension, help to minimize the potential for localized ground-level ozone formation. These materials also help reduce demands on air conditioning systems and save on energy costs.
 - **Providing shade for parking areas.** Approaches may include architectural devices, vegetation, or solar panels. Providing shade for parking areas helps to reduce heat island impacts, and, by extension, helps to minimize the potential for localized ground-level ozone formation. Such measures can also have the additional benefit of channeling or infiltrating stormwater.
 - **Providing charging stations for plug-in electric vehicles.** This measure helps to reduce localized air pollution by supporting the use of non-gasoline powered vehicles. Please refer to the US Department of Energy's website for electric vehicle readiness information:
http://www1.eere.energy.gov/cleancities/electric_vehicle_projects.html. Several charging stations exist nearby in Millsboro, Lewes, and Rehoboth Beach.
 - **Encouraging the use of safe multimodal transportation.** This measure can significantly reduce mobile source emissions. **For every vehicle trip that is replaced by the use of a sidewalk or bike path, 7 pounds of VOC and 11.5 pounds of NOx are reduced each year.**

- **Using retrofitted diesel engines during construction.** This includes equipment that is on-site as well as equipment used to transport materials to and from site.
- **Using pre-painted/pre-coated flooring, cabinets, fencing, etc.** These measures can significantly reduce the emission of VOCs from typical architectural coating operations.
- **Planting native trees in vegetative buffer areas.** Native trees reduce emissions by trapping dust particles and replenishing oxygen. Trees also reduce energy emissions by cooling during the summer and by providing wind breaks in the winter, whereby reducing air conditioning needs by up to 30 percent and saving 20 to 50 percent on fuel costs.

This is a partial list, and there are additional things that can be done to reduce the impact of the development. The applicant should contact the DNREC Division of Air Quality (DAQ) to discuss the above listed measures, and the specific emission mitigation measures that can be incorporated into the Branch Oak development project. The DAQ point of contact is Lauren DeVore, and she may be reached at (302) 739-9437 or lauren.devore@state.de.us.

In addition to the comments above, the Office of State planning has received a letter from Brandy Nauman, Sussex County Housing Coordinator & Fair Housing Compliance Officer. A copy of that letter is enclosed with this letter.

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 PLUS 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,



Constance C. Holland, AICP
Director, Office of State Planning Coordination

CC: Sussex County

Enclosure

BRANDY BENNETT NAUMAN
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FAIR HOUSING COMPLIANCE OFFICER

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Sussex County

DELAWARE
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August 23, 2016

Mr. Frank Kea
Solutions IPEM
303 N. Bedford St.
Georgetown, DE 19947

RE: PLUS Review (PLUS 2016-08-02)

Dear Mr. Kea,

Sussex County endeavors to promote non-discrimination and affordable housing whenever possible throughout the County. In this regard, the developer and associated financial institutions are encouraged to provide and finance affordable housing opportunities to Sussex County residents in all new developments, and affirmatively market those affordable housing units to diverse populations.

For questions about opportunities available for affordable housing projects within Sussex County, please consult Sussex County's "Affordable Housing Support Policy". The policy along with other resources are available on the County's Affordable & Fair Housing Resource Center website: www.sussexcountyde.gov/affordable-and-fair-housing-resource-center. The County's Community Development & Housing Department can advise about existing affordable housing opportunities in Sussex County and the appropriate County Department to contact regarding specific development issues concerning future affordable housing projects within Sussex County.

The Community Development & Housing Department can also explain and assist with any financial support or incentives that may be available to a project from federal, state and county sources, as well as private funding sources that also promote affordable housing in Sussex County.

Please understand that all residential projects, including Affordable Housing Projects are subject to the applicable provisions of the Sussex County Subdivision and Zoning Codes, and the approval processes set forth in those Codes.

On behalf of Sussex County, we look forward to cooperating with you and your project as it moves forward.

Thank you,

Brandy B. Nauman
*Housing Coordinator &
Fair Housing Compliance Officer*



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