



**STATE OF DELAWARE
EXECUTIVE DEPARTMENT
OFFICE OF STATE PLANNING COORDINATION**

February 23, 2015

Mr. Stephen Davies
Apex Engineering, Inc.
27 West Market Street
Newport, DE 19804

RE: PLUS review 2015-01-04, Wilmington University

Dear Mr. Davies,

Thank you for meeting with State agency planners on January 28, 2015 to discuss the proposed plans for Wilmington University. According to the information received you are seeking review of a site plan for 200,000 square feet of commercial use on 41 acres in New Castle 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 New Castle 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 1 according to *Strategies for State Policies and Spending*. This site is also located in the New Castle County Growth Zone. Investment Level 1 reflects areas that are already developed in an urban or suburban fashion, where infrastructure is existing or readily available, and where future redevelopment or infill projects are expected and encouraged by State policy. We are pleased to see that there will be connections made to the adjacent shopping center. Our office has no objections to this project.

Code Requirements/Agency Permitting Requirements

Department of Transportation – Contact Bill Brockenbrough 760-2109

- Per Section 2.3.1 of the Standards and Regulations for Subdivision Streets and State Highway Access, Traffic Impact Studies (TIS) are warranted for developments generating more than 400 vehicle trip ends per day or 50 vehicle trip ends per hour. Section 2.3.2 provides that for developments generating less than 2,000 vehicle trip ends per day and less

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than 200 vehicle trip ends per hour, DelDOT may accept an Area Wide Study Fee of \$10 per daily trip in lieu of a TIS.

- From the PLUS application, DelDOT can see that the proposed development would generate 2,380 vehicle trip ends per typical weekday. Therefore, considering only our volume warrants, a TIS would be warranted. Payment of the Area Wide Study Fee could be an option, depending on the peak hour trip generation were it not for New Castle County regulations, which we understand to require a TIS for developments generating more than 50 peak hour trips. Given the proposed daily trip generation, the peak hour trip generation must be at least 99 vehicle trip ends per hour.
- Therefore DelDOT will require a TIS. Recognizing this requirement, the University's attorney and engineer met with DelDOT and New Castle County staff on December 11, 2014, to discuss a scope of work for the study but no agreement was reached regarding that scope. As discussed below under Suggestions, DelDOT has advertised for comment a revision of the Standards and Regulations. We had understood that the University was waiting for the adoption of that revision before we finalize the scope of work. From the discussion at the PLUS meeting, we now understand that may have been incorrect. We are available to meet with them and the County at their convenience.
- The site entrances on Delaware Route 92 must be designed in accordance with DelDOT's Standards and Regulations for Subdivision Streets and State Highway Access, which is available at http://www.deldot.gov/information/pubs_forms/manuals/subdivisions/pdf/Subdivision_Manual_Revision_1_proposed_060110.pdf. Because the section of Rocky Run Parkway where access is proposed is not State-maintained, a lesser design standard may be acceptable there but because that section of Rocky Run Parkway connects to Concord Pike, which is State-maintained, DelDOT will look critically at the design of that entrance as well in our review of the University's land development plan.
- Further with regard to the site entrances, sight distance and queueing will need to be checked at the proposed entrance on Thompsons Bridge Road (Delaware Route 92) but preliminarily we suggest that a better design might be place the entrance at the apex of the curve south of the proposed entrance location. Doing so would require additional lands from Woodlawn Trustees but could result in a shared access with parcel 06-019.00-002, which could be advantageous for both the University and Woodlawn.

Department of Natural Resources and Environmental Control – Contact Kevin Coyle 735-3495

Wetlands

- State regulated subaqueous lands ARE likely to be located on this property based on a review of aerial photographs, SWMP maps, Soil Surveys and/or USGS topographic maps. Hurricane Run is located within the wooded wetland area seen on the map. State subaqueous lands include all tidal waters (up to the mean high water line), most non-tidal

ivers, streams, lakes, ponds, bays and inlets (up to the ordinary high water line), most perennial streams and ditches and many intermittent streams and ditches. Additional information about State regulated subaqueous lands is available by contacting the Wetlands and Subaqueous Lands Section at (302) 739-9943 or on line at <http://www.dnrec.delaware.gov/wr/Services/Pages/WetlandsAndSubaqueousLands.aspx>.

- Waters of the U.S. regulated by the U.S. Army Corps of Engineers ARE likely to be located on this property based on a review of aerial photographs, SWMP maps, Soil Surveys and/or USGS topographic maps. According to our GIS SWMP maps, there are wetlands regulated by the U.S. Army Corps of Engineers. A wetland delineation by a consultant and contact with the U.S. Army Corps of Engineers is recommended. Waters of the United States include the following: navigable waters of the United States; wetlands; tributaries to navigable waters of the United States, including adjacent wetlands and lakes and ponds; interstate waters and their tributaries, including adjacent wetlands; and all other waters of the United States not identified above, such as isolated wetlands, intermittent streams, and other waters that are not part of a tributary system to interstate waters or to navigable waters of the United States, where the use, degradation or destruction of these waters could affect interstate or foreign commerce. The extent of Federal jurisdiction over Waters of the United States is determined by the U.S. Army Corps of Engineers and is based on site specific conditions. Therefore, an on-site inspection by an environmental consultant is recommended to determine if Waters of the U.S. are located on the property and the limits of Federal jurisdictional. The U.S. Army Corps of Engineers can be contacted at (215) 656-6728 or online at <http://www.nap.usace.army.mil/cenapop/regulatory/regulatory.htm>.

TMDLs

- Total Maximum Daily Loads (TMDLs) for nitrogen, phosphorus, and bacteria have been promulgated through regulation in most of the State of Delaware's water bodies. A TMDL is the maximum level of pollution allowed for a given pollutant below which a "water quality limited water body" can assimilate and still meet 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. TMDLs are required by federal law (Section 303(d) of the 1972 Clean Water Act), and the states are charged with developing and implementing specific land use practices that support these goals. This project is located in the Piedmont drainage, specifically within the Brandywine Creek Sub-basin of the greater Christina River Basin. In the Christina River Basin, post-development nitrogen and phosphorus loading must be capped at the pre-development or baseline loading rate (or a 0% post-construction increase in N & P in Delaware's portion of the Christina River Basin) to meet the required TMDL for each nutrient. Moreover, reductions in bacteria that range from 29% to 95% (High Flow) is also required (depending upon location). The specific required nutrient and bacterial requirements for the various stream segments in the Basin, and background information is outlined in the report entitled "*Christina River Basin High-Flow TMDL*" by the EPA.

This report can be retrieved from the following web link:

http://www.epa.gov/reg3wapd/tmdl/pa_tmdl/ChristinaMeetingTMDL/index.htm

- A nutrient management plan is required under the *Delaware Nutrient Management Law (3 Del.C., Chapter 22)* for all persons or entities who apply nutrients to lands or areas of open space in excess of 10 acres. According to the submitted PLUS application, this project's open space may exceed this 10-acre threshold. Please contact the Delaware Nutrient Management Program at 739-4811 for further information concerning compliance requirements or view the following web link:
<http://dda.delaware.gov/nutrients/index.shtml>

Water Supply

- The project information sheets state water will be provided to the project by United Water DE via a public water system. Our records indicate that the project is located within the public water service area granted to United Water DE under Certificate of Public Convenience and Necessity 88-CPCN-03.
- 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.

Source Water Protection Areas

- The DNREC Ground-Water Protection Branch (GPB) has determined that the project does not fall within any wellhead protection or excellent groundwater recharge potential areas. However, the parcel falls entirely within the Brandywine Creek Drinking Water Watershed. This area is a Level 2 source water protection area for New Castle County (NCC).
- Level 2 Source Water Protection Areas are the delineated watershed upstream from public drinking water supply intakes. Land Use or Land Activity within these areas has the potential to influence water quality or quantity to the public drinking water system.
- GPB recommends referring to NCC Unified Development Code for regulations regarding development in these water resource protection areas.

Sediment and Stormwater Program

- A sediment and stormwater plan will be required for the site. Contact the reviewing agency to schedule a project application meeting to discuss the sediment and erosion

control and stormwater management components of the plan as soon as possible. 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 New Castle County Department of Land Use Engineering Section. Contact the Department of Land Use at (302) 395-5470 for details regarding submittal requirements and fees.

Hazardous Waste Sites

- If it is determined by the Department that there was a release of a hazardous substance on the property in question and the Department requires remediation pursuant to the Hazardous Substance Cleanup Act, the provisions of 7 Del.C. Chapter 91, Delaware Hazardous Substance Cleanup Act and the Delaware Regulations Governing Hazardous Substance Cleanup shall be followed.

There are no SIRS sites or salvage yards found within a ½-mile radius of the proposed project.

Tank Management

- Please be aware: If a release of a Regulated Substance occurs at the proposed project site, compliance of 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.
- The following confirmed leaking underground storage tank (LUST) projects are located within a quarter mile from the proposed project area:

SDK Stratford Apartments, Facility: 3-000926, Projects: (9 projects in total—all inactive)

SMO #293, Facility: 3-000342, Project: N1409074, N1308091, N0912106, N0606064 (Inactive)

Brandywine Realty & Dev Inc., Facility: 3-001779, Project: N9707107 (Inactive)

ACE American Insurance Company, Facility: 3-000716, Project: N9911221 (Inactive)

- 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.

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	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	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	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 minimum levels (See Section 3.2.1)
7 DE Admin. Code 1141 – Limiting Emissions of Volatile Organic Compounds from Consumer and Commercial Products	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	Ensure that emissions of nitrogen oxides (NO _x), non-methane hydrocarbons (NMHC), particulate matter (PM), sulfur dioxide (SO ₂), carbon monoxide (CO), and carbon dioxide (CO ₂) from emergency generators meet the emissions limits established. (See section 3.2). Maintain recordkeeping and reporting requirements.
7 DE Admin. Code 1145 – Excessive Idling of Heavy Duty Vehicles	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>.

State Fire Marshal – Contact John Rudd 323-5365

Regulations/Code Requirements

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):

- **Fire Protection Water Requirements:**
 - Water distribution system capable of delivering at least 1000 gpm for 1-hour duration, at 20-psi residual pressure is required. Fire hydrants with 800 feet spacing on centers.

- Where a water distribution system is proposed for business sites, the infrastructure for fire protection water shall be provided, including the size of water mains for fire hydrants and sprinkler systems.
- **Fire Protection Features:**
 - All structures over 10,000 square feet aggregate will require automatic sprinkler protection installed.
 - Buildings greater than 10,000 square feet, 3-stories or more, over 35 feet, or classified as High Hazard, are required to meet fire lane marking requirements
 - Buildings with upper floors greater than 10,000 square feet will require Standpipe Systems and Hoses to be installed .
 - Show Fire Department Connection location (Must be within 300 feet of fire hydrant), and detail as shown in the DSFPR.
 - Show Fire Lanes and Sign Detail as shown in DSFPR
- **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 site from Rocky Run Parkway, Beaver Valley Road and Ramsey Road must be constructed so fire department apparatus may negotiate it. If a “center island” is placed at an entrance road, it shall be arranged in such a manner that it will not adversely affect quick and unimpeded travel of fire apparatus into the site.
 - 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.
 - 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 or other restrictive measures on the access road leading from Rocky Run Parkway that may limit fire department access into and out of the property.
- **Gas Piping and System Information**
 - Provide type of fuel proposed, and show locations of bulk containers on plan.
- **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 is to be sprinklered
- Name of Water Provider
- Letter from Water Provider approving the system layout
- Provide Lock Box Note (as detailed in DSFPR) if Building is to be sprinklered
- Provide Road Names, even for County Roads

Recommendations/Additional Information

Department of Transportation – Contact Bill Brockenbrough 760-2109

- Please be advised that DelDOT has advertised for comment a comprehensive revision of the Standards and Regulations. One comment period ran through June 1 through June 30, 2014, a second comment period ran December 1 through December 31, 2014, and DelDOT could adopt this revision as soon as February 2015. Implementation guidance has not been developed but DelDOT recommend that the University's engineer become familiar with the proposed changes and assess whether any of them could be relevant to this project. Information on the proposed revision is available in the Register of Regulations and at http://www.deldot.gov/information/pubs_forms/revisions_to_ASR/index.shtml.
- Because the proposed development would generate more than 200 vehicle trips per day, a Pre-Submittal Meeting is required before plans are submitted for review. Guidance on what will be covered at this meeting and how to prepare for it is located at http://www.deldot.gov/information/business/subdivisions/Pre-Submittal_Meeting_Requirements.doc. The form needed to request this meeting is available at http://www.deldot.gov/information/business/subdivisions/Meeting_Request_Form.doc.
- As shown on the Investment Level map associated with the Strategies for State Policies and Spending, the subject development is located in a Level 1 area. DelDOT's Shared-Use Path and/or Sidewalk Process policy (available at http://www.deldot.gov/information/business/subdivisions/SUP_Sidewalk_Process.pdf) states that a path or sidewalk shall be installed along the State-maintained road frontage of any development in a Level 1 or 2 area. Where the construction is not physically possible, a fee in lieu of construction is charged, but DelDOT can see no locations where that will be necessary. The University should expect a requirement that they install a sidewalk or shared-use path along all or most of the site frontage to serve the development.

- DART First State Bus Routes 2, 35 and 61 all serve the section of Concord Pike where the proposed campus has frontage. DelDOT recommend that the University begin discussions with Delaware Transit Corporation (DTC) now about how to best provide transit service to their students, faculty and staff. Without implying any commitment on DTC's part, DelDOT notes that routing a bus onto the site would likely mean that a heavier pavement section than would otherwise be needed on the driveways connecting Beaver Valley Road (Delaware Route 92) and Rocky Run Parkway. DelDOT recommend Mr. Wayne Henderson, a Senior Planner at DTC, as an initial point of contact. Mr. Henderson may be reached at (302) 576-6063.

Department of Natural Resources and Environmental Control – Contact Kevin Coyle 735-3495

Soils Assessment.

- Based on the NRCS soil survey mapping update, the only soil mapping unit in this parcel with significant limitations for development is Watchung (WaB; See figure 1). Watchung is a poorly-drained wetland associated hydric soil that is considered to have severe limitations and/or considered unsuitable for development.
- DNREC strongly discourage building on hydric soils (one of "key parameters" for identifying the presence and the functional benefit of wetlands) because they are functionally important source of water storage (behaves as a "natural sponge"); the loss of water storage through excavation, filling, or grading of native intact hydric soils increases the probability for more frequent and destructive flooding events (Figure 1). The probability for flooding is further compounded by increases in surface imperviousness as building density in the area increases over time. Additionally, the destruction of hydric soils increases pollutant runoff (i.e., hydric soils sequester pollutants) which has been linked to the monitored/observed declines in regional (e.g., watershed) water quality.



Bog Turtle

- A bog turtle (*Glyptemys muhlenbergii*) habitat evaluation was conducted in 2007, indicating that potential bog turtle habitat may be present at the site. Because the bog turtle is a federally listed species, protected under the Endangered Species Act, its presence can affect the scope of work. To ensure that the project will not impact bog turtles or their habitat, Phase I surveys for bog turtle habitat should be conducted.
- Phase I surveys can be conducted any time of year when ice and/or snow cover is not present. If potential habitat is found, however, please note there is a time of year restriction during which Phase II surveys for bog turtles must be conducted. *A Delaware*

approved bog turtle surveyor must be used to conduct the surveys. Please contact Holly Niederriter (302-735-8670) to obtain a list of contacts to conduct Phase I and, if necessary, Phase II surveys.

If potential bog turtle habitat is found during Phase I surveys, you are required to either:

Completely avoid all direct and indirect project impacts to the wetland, in consultation with the U.S. Fish and Wildlife Service and Delaware Division of Fish and Wildlife;

OR

Have Phase II surveys conducted to determine if bog turtles are present. In accordance with Delaware's bog turtle site survey procedures, surveys must be conducted by a State-approved bog turtle surveyor between April 15 and June 15.

Northern Long-eared Bat

- Please be aware that this project is within 3 miles of known Northern Long-eared Bat (*Myotis septentrionalis*) locations. The Northern Long-eared Bat has been proposed for federal listing as threatened under the U.S. Endangered Species Act, with an expected decision of April 2, 2015 by the U.S. Fish and Wildlife Service. If listed, we anticipate a regulatory zone of 3 miles surrounding known Northern Long-eared Bat locations. Although we do not believe this area would be of concern for Northern Long-eared Bat, please note that future development activities may be subject to review by endangered species biologists.

Nuisance Waterfowl

- Wet ponds created for stormwater management purposes may attract resident Canada geese and mute swans that will create a nuisance for community residents. High concentrations of waterfowl in ponds create water-quality problems, leave droppings on lawn and paved areas and can become aggressive during the nesting season. Short manicured lawns surrounding ponds provide attractive habitat for these species.
- To deter waterfowl from taking up residence in these ponds, we recommend planting the surrounding open space with a mix of native wildflower plantings (to be planted in accordance with the Sediment and Stormwater Plan approval agency requirements). It is best to mow the open space area surrounding the pond only once a year, either in February or March. If mowing must occur more often, it would be helpful to leave a minimum buffer of 15-30 feet in width to be mowed annually. This area would be necessary to adequately deter the waterfowl from inhabiting the area (when the view of the surrounding area from the pond is blocked, geese can't scan for predators and are less likely to reside and nest in the area of the pond). In addition to deterring nuisance waterfowl, the native wildflower mix will also serve to attract bees, butterflies, and other pollinators, and reduce run-off, which can contain oil and other pollutants that homeowners may use on their lawns and driveways.

- Our program botanist, Bill McAvoy would gladly assist in drafting a list of plants suitable for this site. Bill can be contacted at (302) 735-8668 or William.McAvoy@state.de.us.

Additional information on TMDLs and water quality

- A Pollution Control Strategy (PCS) to achieve the required TMDL nutrient and bacterial load reduction requirements has been established for the Christina Basin. The web link for the Christina watershed PCS strategies is as follows:
<http://www.dnrec.delaware.gov/swc/wa/Pages/WatershedManagementPlans.aspx>
- DNREC strongly encourages the applicant reduce nutrient and bacterial pollutants on their parcel through voluntary implementation of the following recommended BMPs:
- Maintain as much of the existing open space as possible; DNREC further suggest that the applicant consider additional native tree and/or native herbaceous planting in the open space.
- Obtain approval of your wetlands delineation by the United State Army Corps of Engineers (USACE) before commencing any construction activities. According to information submitted by the applicant in the PLUS application, wetlands delineation was conducted (although no apparent submission of the wetlands delineation was forwarded DNREC) but not approved by the USACE.
- 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 a minimum 100-foot upland buffer (planted in native vegetation) from all waterbodies and wetlands (as determined by USACE approved wetlands delineation). Buffers less than 100-foot from wetlands and/or streams are considered insufficiently protective of water quality.
 - Avoidance of all hydric soils is strongly recommended.
 - Construction of ponds is not considered an acceptable BMP because of nuisance algae, nuisance geese, and water pollution concerns. DNREC strongly advise the applicant eliminate from consideration siting of additional ponds in the proposed project area.
 - Calculate all post-construction surface imperviousness with all forms of created (or constructed) surface imperviousness (e.g., rooftops, driveways, parking lots, sidewalks, ponds, and/or “pondlike” open-water storm water management structures, and roads) included.

- Since the proposed project area is a large commercial development that will create significant increases in post-construction surface imperviousness (e.g., parking areas and roof tops), attendant impacts such as flooding and pollutant runoff are also likely to significantly increase. Therefore, DNREC strongly recommend the use of pervious paving materials (e.g., pervious pavers) as a BMP – wherever practicable - instead of conventional asphalt or concrete to help reduce potential flooding and pollutant runoff impacts to waterbodies and wetlands in the watershed.
- The use of rain gardens and green-technology storm water management structures (in lieu of open-water management structures) are recommended as BMPs to reduce nutrient pollutant impacts. Please contact Lara Allison at 739-9939 for further information about siting a rain garden(s) on this parcel.
- Voluntarily 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) that result from the conversion of individual or combined land parcels to a different land use(s), while providing applicants with quantitative information about their project’s impact(s) on baseline water quality. DNREC strongly encourage the applicant/developer use this protocol to help them design and implement the most effective BMPs. Please contact John Martin or Jen Walls at 302-739-9939 for more information on the protocol.

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.

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). SIRB should also be contacted as soon as possible at 302-395-2600 for further instructions.

Additional information on air quality

- DNREC encourages developers and builders to consider all sustainable growth practices in their design, and DNREC believes 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; Delaware currently violates federal health-based air quality standards for ozone, 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.
 - Based on the information provided, the three air emissions components (i.e., area, electric power generation, and mobile sources) for the project could not be quantified. DAQ was able, however, to quantify the mobile emissions based on the proposed daily trip data presented in the application and data taken from the ITE Trip Generation Manual, 8th Edition. Table 1 represents the actual impact the Wilmington University North Campus project may have on air quality.

Emissions Attributable to Wilmington University (Tons per Year)	Volatile Organic Compounds (VOC)	Nitrogen Oxides (NOx)	Sulfur Dioxide (SO ₂)	Fine Particulate Matter (PM _{2.5})	Carbon Dioxide (CO ₂)
Mobile	7.91	10.42	*	*	*

(*) Indicates data is not available.

- Note that emissions associated with the actual construction of the mixed use development, 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 paragraph above.

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.

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% 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 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 surface lot 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 no more than the minimum local code requirements for parking capacity

- This measure minimizes the environmental harms associated with parking facilities, such as automobile dependency, vehicle emissions, land consumption, and stormwater runoff.

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, bike path, or mass transit, 7 pounds of VOC and 11.5 pounds of NO_x 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 trees in vegetative buffer areas, particularly those between the site and adjacent residential areas

- 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 submit a plan to the DNREC DAQ which address the above listed measures, and that details all of the specific emission mitigation measures that will be incorporated into the Wilmington University North Campus project. The DAQ point of contact is Rachel Yocum, and she may be reached at (302) 739-9402.

State Fire Marshal – Contact John Rudd 323-5365

- 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, technical services link, plan review, applications or brochures.

State Historic Preservation Office – Contact Terrence Burns 736-7404

- There was a known historic house (N-555), and an existing school building (N-557) on this parcel. The house (N-555) was probably demolished, but the outbuilding close by could be associated with it. School District Number 6 (N-557) is towards the corner of Beaver Valley Road and Ramsey Road. When the school was evaluated in the 1990s, it was determined eligible, as a National Register property. However, it was never nominated to the National Register of Historic Places. Area residents have also been researching the possibility of a broader historic district in the Beaver Valley area, encompassing parts of Pennsylvania and Delaware, including the subject parcel. The developer should consider putting sufficient landscaping or other barrier to prevent noise and visual intrusions on the house (N-555) (if still standing), and school (N-557).
- According to the Pomeroy and Beers Atlas of 1868 (a 19th-century historic map), there were dwellings on the parcel that were associated with a W. T. Tally and a H. Haughey. The USGS Map of 1904 indicates dwellings there at that time as well. The one that was associated with a H. Haughey seems to be near or approximately in the same location as the known house (N-555) on the parcel. The buildings shown associated with W. T. Talley were on the northern part of the parcel, where it appears that the development would have a direct impact. There may be archaeological remains associated with these dwellings. With this in mind, it is important that the developer be aware of the Unmarked Human Burials and Human Skeletal Remains Law, which is Chapter 54 of Title 7, of the Delaware Code (7 Del. C. Ch. 54). Therefore, prior to any demolition or ground-disturbing activities, the developer may want to hire an archaeological consultant to examine the parcel for any potential archaeological site or archaeological resources, such as cemetery, burial site, or unmarked human remains.
- 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 check the following websites for additional information:

www.history.delaware.gov/preservation/umhr.shtml and

www.history.delaware.gov/preservation/cemeteries.shtml

- Furthermore, if there is any federal involvement with the project, in the form of licenses, permits, or funds, the federal agency, often 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.

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

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

Sincerely,



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

CC: New Castle County