



STATE OF DELAWARE  
EXECUTIVE DEPARTMENT  
OFFICE OF STATE PLANNING COORDINATION

June 20, 2018

Ted Williams, P.E.  
Landmark Science & Engineering  
200 Continental Drive, Suite 400  
Newark, DE 19713

RE: PLUS Review 2018-05-05; Appoquinimink School District – Brick Mill Early Childhood Center

Dear Ted,

Thank you for meeting with State agency planners on May 23, 2018 to discuss the proposed plans for the Appoquinimink School District – Brick Mill Early Childhood Center. According to the information received you are seeking review of a school site feasibility for a new 40,000 square foot early childhood school partially in an Out of Play area along Brick Mill Road in Middletown.

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 Middletown is the governing authority over this land, the developers will need to comply with any and all regulations/restrictions set forth by the Town.**

**Strategies for State Policies and Spending**

- This project is located in Investment Level 1 and an Out of Play area according to the *Strategies for State Policies and Spending*. 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. Out of Play reflects lands that, at the time the State Strategies were developed, were not available for private development due to public ownership and / or preservation. No structure is proposed in the Out of Play area.

## **Code Requirements/Agency Permitting Requirements**

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

- The site access on Brick Mill Road (New Castle Road 430) must be designed in accordance with DelDOT's Development Coordination Manual, which is available at <http://www.deldot.gov/Business/subdivisions/index.shtml?dc=changes>.
- Pursuant to Section P.3 of the Manual, a Pre-Submittal Meeting is required before plans are submitted for review.
- 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.

Per Section 2.2.2.2 of the Manual, developments generating fewer than 2,000 vehicle trip ends per day and fewer than 200 vehicle trip ends per hour in any hour of the day may be eligible to pay a fee, the Area Wide Study Fee, in lieu of doing a TIS. Payment of the fee does not exempt the developer from responsibility to make off-site improvements or from preparing a Traffic Operational Analysis (TOA) if DelDOT identifies a need for a TOA in the plan review process.

Per Section 2.3.2 of the Manual, DelDOT may require a TOA for any development project that is expected to generate 200 or more vehicle trips per day and for which a TIS was not completed.

Preliminarily, DelDOT estimates that the proposed 40,000 square foot early Childhood Center would increase the site traffic by 781 vehicle trip ends per day, of which 279 would occur during the morning peak hour. On that basis, a TIS would be required. DelDOT could not accept the Area Wide Study Fee.

From DelDOT's perspective, the primary purpose of a TIS is to determine necessary off-site improvements. Two such improvements that DelDOT can identify without the TIS are extensions of the existing turning lanes at the site entrance and a contribution to DelDOT's planned improvements to Delaware Route 299 from Catherine Street to Delaware Route 1. More information on DelDOT's Route 299 project is available at <https://www.deldot.gov/information/projects/sr299/index.shtml>. As discussed at the PLUS meeting, it may be possible to include the entrance improvements in the Route 299 project.

The school district may contact DelDOT's project manager (See the link just provided.) to determine how, if at all, that can be done.

- Section 3.5.4.2 of the Development Coordination Manual addresses requirements for shared-use paths and sidewalks. Referring to Section 3.5.4.2.A of the Manual, developments in Level 1 and 2 Areas are required to install a sidewalk or Shared Use Path along their frontage on State-maintained roads. DelDOT anticipates requiring a sidewalk or Shared Use Path along the development frontage on Brick Mill Road. From aerial photography, the sidewalk in front of the existing elementary school lacks a proper connection to the road shoulder at the north end of the parcel. DelDOT's Geographic Information System indicates that the sidewalk is not compliant with the Americans with Disabilities Act (ADA), perhaps for that reason. Any ADA deficiencies will need to be remedied.

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

Development of this parcel 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 reduced impervious surface cover and protection of the excellent groundwater recharge area, on which the parcel is located. Due to this source water concern, DNREC has outlined a number of best management practices to assist in protecting the resource and the overall health of the community.

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 (funding assistance may be found at [www.de.gov/cleantransportation](http://www.de.gov/cleantransportation)). DNREC further recommends an abundant use of native vegetation and shade trees throughout the landscape, as well as other green infrastructure, where practicable, to absorb carbon dioxide, protect water quality and provide relief to students and staff 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.

### **Source Water Protection.**

- DNREC has determined that the project falls within a significant portion of an excellent groundwater recharge potential area for the Town of Middletown.
- Although the Town of Middletown's Source Water Protection Ordinance meets the minimum standards of protection, this protection does not limit impervious cover in excellent ground-water recharge potential areas. Impervious cover prevents precipitation from infiltrating through the soil to the water table aquifer. Impervious cover refers to structures including but not limited to roads, sidewalks, parking lots, and buildings. Any impervious cover within an area of excellent ground-water recharge potential area has the potential to have a negative effect the quality and quantity of drinking water available.
- New Castle County (NCC) refers to excellent ground-water recharge potential areas as 'recharge areas'. Recharge areas are characterized as deposits of coarser grained material that have the best ability to transmit water vertically through the unsaturated zone to the water table. The NCC recharge areas were mapped using the methods described in the Delaware Geological Survey Open File Report No. 34, "Methodology for Mapping Ground-Water Recharge Areas in Delaware's Coastal Plain" (Andres, 1991), and depicted in a series of maps prepared by the Delaware Geological Survey (Butoryak and Talley, 1993).
- This map category (excellent) is an indicator of how fast contaminants will move and how much water may become contaminated (Andres, 2004). Land use activities or impervious cover on areas of excellent ground-water recharge potential may adversely affect ground water in these areas.
- The DNREC GPB recommends that the portion of the new development within the excellent ground-water recharge area not exceed 20% impervious cover. Some allowance for augmenting ground-water recharge should be implemented if the impervious cover exceeds 20% but is less than 50% of that portion of the parcel within this area. However, the development should not exceed 50% regardless (DNREC, 2005). A water balance calculation (environmental assessment) will be necessary to determine the quantity of clean water to be recharged via a recharge basin (Thorntwaite and Mather, 1957). The purpose of an impervious cover threshold is to minimize loss of recharge (and associated increases in storm water) and protect the quality and quantity of ground water.
- DNREC recommendations: as consistent with NCC Unified Code Sections: 40.10.380 (B), 40.10.384 (A), 40.10.385, and 40.10.410.
  - Reduce impervious cover to less than 50%
  - Perform an environmental assessment report showing that water quality as well as water quantity of post development recharge is equal to or greater than pre-development recharge (Kauffman et al., 2005).

- Quantify amount of recharge lost due to impervious cover and provide for onsite infiltration of water at least equal to or greater than pre-development recharge (Kauffman et al., 2005).
- Pretreatment of parking area runoff to remove dissolved chemical and nutrient loads prior to infiltration
- The applicant indicates bio-retention bio-swales and filter strips will manage stormwater. The construction phase of these types of structures requires excavation, hauling, and grading. The heavy equipment used in this phase has the capacity to compact and degrade the structure of the strata that defines the area as an excellent ground water recharge area (Schueler, 2000a). Changes to the structural soil properties may cause significant reduction in recharge capacity. Installing storm-water management facilities in excellent ground-water recharge areas has the potential to contaminate the ground water beneath it and infiltrate into the aquifer (Schueler, 2000b).

DNREC recommends:

- Pretreatment of parking area runoff to remove dissolved chemical and nutrient loads prior to infiltration
- Perform an environmental assessment report showing that water quality as well as water quantity of post development recharge is equal to or greater than pre-development recharge (Kauffman et al., 2005).
- Quantify amount of recharge lost due to impervious cover and provide for on-site infiltration of water at least equal to or greater (Kauffman et al., 2005)
- In addition, because the excellent ground water recharge area can so quickly affect the underlying aquifer if contaminants are spilled or discharged across the area, the storage of hazardous substances or wastes should not be allowed within the area unless specific approval is obtained from the relevant state, federal, or local program.
- *References:*
  - Andres, A. S., 1991, Methodology for Mapping Ground-Water Recharge Areas in Delaware's Coastal Plain: Delaware Geological Survey Open File Report No. 34, p. 18.
  - , 2004, Ground-Water Recharge Potential Mapping in Kent and Sussex Counties, Delaware, Delaware Geological Survey Report of Investigations No. 66, p. 14.
  - Butoryak, K. R., and Talley, J. H., 1993, Delineation of Ground-Water Recharge Resource Protection Areas in the Coastal Plain of New Castle County, Delaware: Delaware Geological Survey Project Report for the Water Resources Agency for New Castle County, p. 26.

DNREC, 2005, Source Water Protection Guidance Manual for the Local Governments of Delaware: Dover, DE, State of Delaware, Department of Natural Resources and Environmental Control, p. 144.

Kauffman, G. J., Wozniak, S. L., and Vonck, K. J., 2005, Delaware Ground-Water Recharge Design Manual: Newark, DE, University of Delaware, Water Resources Agency, p. 31.

Schueler, T. R., 2000a, The Compaction of Urban Soils, in Schueler, T. R., and Holland, H. K., eds., The Practice of Watershed Protection: Ellicott City, MD, Center for Watershed Protection, p. 215-218.

-, 2000b, Pollutant Dynamics of Pond Muck, in Schueler, T. R., and Holland, H. K., eds., The Practice of Watershed Protection: Ellicott City, MD, Center for Watershed Protection, p. 453-460.

Thornthwaite, C. W., and Mather, J. R., 1957, Instructions and Tables for Computing Potential Evapotranspiration and the Water Balance: Drexel Institute of Technology, Publications in Climatology v. X, no. 3, p. 129.

#### **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. The plan review and approval as well as construction inspection will be coordinated through the Division of Soil and Water Conservation Sediment and Stormwater Program. Contact Elaine Webb with the Sediment and Stormwater Program at (302) 739-9921, for details regarding submittal requirements and fees. It is strongly recommended that you contact the reviewing agency to schedule a pre-application meeting with the Sediment and Stormwater Section 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.

#### **State Historic Preservation Office – Contact Carlton Hall 736-7404**

- There are no known National Register listed buildings on the parcel. However there is a one-story, L-shaped house (N14665) on the adjacent parcel and to our office's knowledge has not been evaluated for National Register listing.
- If any project or development proceeds, the developer should be aware of the Unmarked Human Burials and Human Skeletal Remains Law. Prior to any demolition or ground-disturbing activities, the developer should hire an archaeological consultant, to examine the parcel for archaeological resources, including unmarked human burials or human skeletal remains, to avoid those sites or areas.

- Disturbing unmarked graves or burials triggers the Delaware's Unmarked Human Burials and Human Skeletal Remains Law (Del. C. Title 7, 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 unmarked graves, burials or a cemetery, the Division of Historical & Cultural Affairs 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 see more information, please review the following websites: [www.history.delaware.gov/preservation/umhr.shtml](http://www.history.delaware.gov/preservation/umhr.shtml) and [www.history.delaware.gov/preservation/cemeteries.shtml](http://www.history.delaware.gov/preservation/cemeteries.shtml)
- If there is federal involvement, 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). 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 the following: [www.achp.gov](http://www.achp.gov)

### **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 these suggestions can benefit the project.

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

- In accordance with Section 2.4 of the Manual, DelDOT is working with the Town of Middletown to create a Transportation Improvement District (TID) for the east side of town. Depending on the District's timing relative to the creation of the TID, they could be required to pay a fee but in turn be relieved of requirements for traffic studies and off-site improvements. For more information on the TID, the District may contact Ms. Sarah Coakley, a planner in DelDOT's Statewide and Regional Systems Planning Section. Ms. Coakley may be reached at (302) 760-2236 or [Sarah.Coakley@state.de.us](mailto:Sarah.Coakley@state.de.us).

**Department of Natural Resources and Environmental Control – Contact Michael**

**Tholstrup 735-3352**

**Fish and Wildlife.**

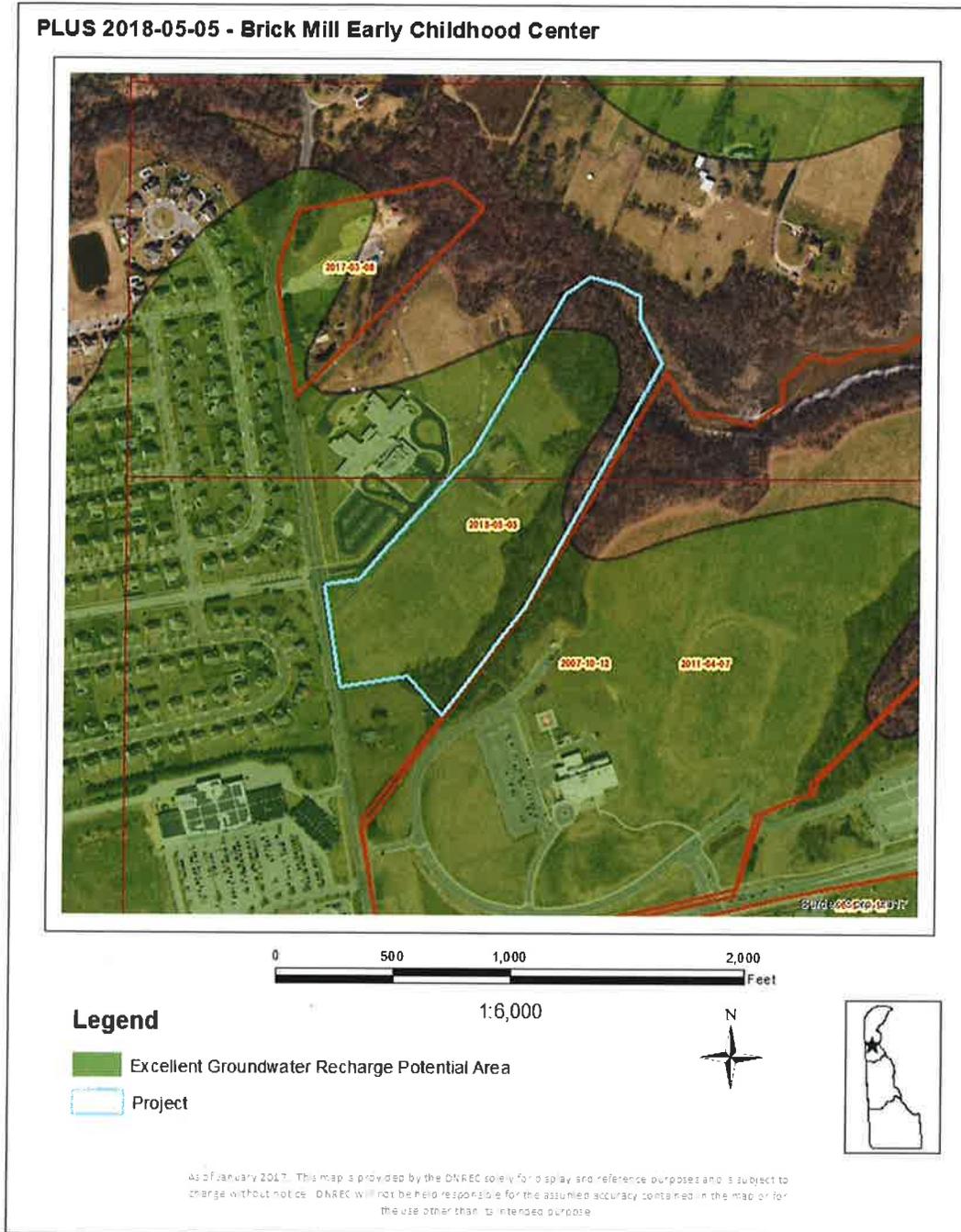
- The applicant indicates that no ground disturbance will occur within 100 ft. of wetlands, streams, wells or waterbodies, but the drawings appear to intersect with wetlands on site as well as on steep slopes. It will be important to ensure that a minimum 100-ft. buffer is left intact around the perimeter of these wetlands. Upland buffers serve as habitat for many terrestrial species that are dependent on aquatic and wetlands habitats for a portion of their annual life cycle. 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. Development on steep slopes should be avoided as well.

**Air quality.**

- DNREC recommends the following considerations for the Brick Mill Early Childhood Center to mitigate potential air pollution impacts:
  - Preservation of open space where appropriate,
  - Expansion of the current bicycle and pedestrian network,
  - Encouraging the use of alternative transportation modes,
  - Planting native trees and landscaping.
- As an added component to address air quality concerns in the area, the applicant is encouraged to add electric vehicle supply equipment (EVSE) and charging where feasible in common areas to accommodate cleaner vehicular transportation through the area. DNREC's clean transportation website has more information about the various electric charging options and where they are best deployed. DNREC also offers rebates to lower the cost of electric vehicle charging stations at the workplace. For additional information on how the District can become involved with this growing and successful program, please visit the following link: [www.de.gov/cleantransportation](http://www.de.gov/cleantransportation).
- DNREC encourages the expansion of alternative transportation modes such as walking and biking, including the use of sidewalks and bike paths. It is recommended that efforts be coordinated to maximize the availability of alternative travel modes such as walking and biking to the school. Bike racks could be included in common areas.
- DNREC also recommends native trees in the school plan. The planting of native tree species improves the ability to reduce air pollution by taking in carbon dioxide and converting it into oxygen and particulate matter (PM) through leaves surfaces. The ideal tree species to use are those with large leaf surface areas, high transpiration rates and have hairy or sticky leaves which are amenable to particle collection.

**Reference Map.**

- Excellent Groundwater Recharge Potential:



**Approval Process**

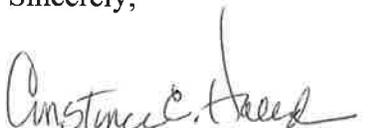
School sites must be approved by the Secretary of Education, the Director of OMB, and the Director of the Office of State Planning Coordination. The *Strategies for State Policies and Spending*, the information contained within this PLUS letter, and other factors will be considered when the Secretary and the two Directors make the determination about whether or not to approve a school site.

Once the District decides on a school site or sites to pursue for approval, the district must submit a letter requesting approval for the site(s) to the Department of Education. The letter should be directed to the DOE staff responsible for the Capital Program. The letter should contain a tax parcel ID number, PLUS review number, and all relevant information regarding the site and the proposed school.

**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  
Town of Middletown  
James Pennewell, Department of Education