



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 2018-05-07; Appoquinimink School District – Middletown High School Expansion

Dear Ted,

Thank you for meeting with State agency planners on May 23, 2018 to discuss the proposed plans for the Appoquinimink School District – Middletown High School Expansion. According to the information received you are seeking review of a school site feasibility for a 20,000 square foot expansion to an existing high school along Rt. 299 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 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.

**Code Requirements/Agency Permitting Requirements**

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

- The high school is located along a State Scenic and Historic Byway, specifically the Harriet Tubman Underground Railroad Byway, which follows Delaware Route 299 and Silver Lake Road (New Castle Road 442) through Middletown. The presence of the byway has two effects on the use of the site:

- Per CFR 23 §131 and 17 Del. C. §1101-1120, no new billboards, variable message boards, or electronic message signs will be permitted anywhere within 660 feet of any closest right-of-way edge.
- DelDOT may require the placement of a byway auto tour traffic sign. This sign would be situated in public right of way along Route 299 or Silver Lake Road.

More information on the byway is available at

<http://deldot.maps.arcgis.com/apps/webappviewer/index.html?id=03d5049bc49041658cfecad5fd6ba8b9>.

- The site access on East Main Street (Delaware Route 299) and on Silver Lake Road 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. If the District proposes a relatively minor expansion, the applicant's engineer should contact DelDOT's New Castle County Review Coordinator, Ms. Erin Osborne, to discuss the level of review that will be needed. Given the relatively minor nature of the proposed expansion, the already-developed nature of the site and the urban context, it could be that no new entrance construction would be necessary. Ms. Osborne maybe reached at (302) 760-2128 or Erin.Osborne@state.de.us.
- 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.

- 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 Delaware Route 299 and Silver Lake Road. This requirement may be satisfied by improving the existing sidewalk there. DelDOT's Geographic Information System indicates that the sidewalk is not compliant with the Americans with Disabilities Act (ADA). Any ADA deficiencies will need to be remedied. Additionally, there is a missing section of sidewalk on Route 299, in front of the parcel immediately west of the high school. As a matter of pedestrian safety, this missing section should be completed as soon as possible.

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

Development of this parcel will result in increased impervious surface; 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.**

- The project falls entirely 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, the ordinance 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.

- DNREC 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).
- 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 archaeological sites, or known National Register-listed or eligible properties on the parcel.
- If any project or development proceeds, the developer should be aware of the Unmarked Human Burials and Human Skeletal Remains Law (Del. C. Title 7, Ch. 54).

**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).
- Related to the TID, DelDOT is developing a project to widen Delaware Route 299 from Catherine Street to Delaware Route 1. More information is available at <https://www.deldot.gov/information/projects/sr299/index.shtml> but the project would affect the site frontage on Route 299.

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

**Air quality.**

- DNREC recommends the following considerations for the Middletown High School Expansion 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.

**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.

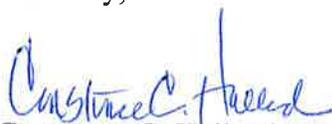
Once the District decides on a school site or sites to pursue for approval, the district must submit a letter requesting approval for the site(s) to the Department of Education. The letter should be directed to the DOE staff responsible for the Capital Program. The letter should contain a tax parcel 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,

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

Constance C. Holland, AICP

Director, Office of State Planning Coordination

CC: New Castle County  
Town of Middletown  
James Pennewell, Department of Education