



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

December 23, 2014

Mr. Chris O'Keefe  
VanDemark & Lynch, Inc.  
4305 Miller Road  
Wilmington, DE 19802

RE: PLUS review 2014-11-06, Mapleton Charter School

Dear Mr. O'Keefe,

Thank you for meeting with State agency planners on November 26, 2014 to discuss the proposed plans for the Mapleton Charter School. According to the information received, you are seeking review of a site plan for a 43,000 sf elementary school on 13 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 3 according to the *Strategies for State Policies and Spending*. Investment Level 3 reflects areas where growth is anticipated by local, county, and state plans in the longer term future, or areas that may have environmental or other constraints to development. State investments may support future growth in these areas, but please be advised that the State has other priorities for the near future. We encourage you to design the site with respect for the environmental features which are present.

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

### **State Historic Preservation Office – Contact Terrence Burns 736-7404**

- There are no known cultural or historic resources, such as an Archaeological Site or National Register-listed property, on this parcel. However, there is a National Registered listed property right next to the parcel along Lorewood Grove Road known as Fairview (N-5193), and a part of the National Register Nomination of the Rebuilding of St. Georges Hundred (N-9567), which is on the National Register of Historic Places.
- On the Pomeroy and Beers Atlas of 1868 (19th-century historic map), it appears that there were structures on the parcel that were associated with a J. P. Hudson, R. Polk and Mapleton. The structure that is associated with J. P. Hudson is in the same location as the National Registered property known as Fairview (N-5193). The USGS Topographic Map of 1906 also indicated that there were structures there as well. With this in mind, it is important that the developer be aware of the Unmarked Human Burials and Human Skeletal Remains Law, which is outline 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 (Delaware Code Title 7, Chapter 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](http://www.history.delaware.gov/preservation/umhr.shtml) and [www.history.delaware.gov/preservation/cemeteries.shtml](http://www.history.delaware.gov/preservation/cemeteries.shtml).

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 (historic or pre-historic), historic cemetery or unmarked human remains. The developer should also consider putting sufficient landscaping or a protection barrier between the future development and Fairview (N-5193), in order to protect it from the adverse sounds or visual effects.

- 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](http://www.achp.gov)

Department of Transportation – Contact Bill Brockenbrough 760-2109

- By the developer's estimate on the PLUS application, the site would generate 279 vehicle trip ends per day. The Institute of Transportation Engineers (ITE), in their Trip Generation report, they provide summarized information on the trip generation of a wide range of land uses based on at least one independent variable per land use. This information includes, for each variable used to predict daily (or peak hour) traffic, both an average rate and a range of rates and, where sufficient data showing a significant relationship, a regression equation. For the weekday trip generation of Elementary Schools, using the number of students or the floor area, ITE's average rates would predict much higher traffic, 774 vehicles per day based on the number of students or 663 vehicles per day based on the floor area. However, a trip generation of 279 vehicles per day is possible within the range of rates observed for either variable. Likely factors driving down the trip generation would be high percentages of students walking, biking or riding buses.

Using the ITE average rates per student, DelDOT would expect the school to generate 270 vehicle trip ends per hour in the morning peak hour and 168 vehicle trip ends per hour in the school's afternoon peak hour and 90 vehicle trip ends per hour in the afternoon highway peak hour. Therefore, if the ITE average rates correctly describe the school's trip generation, the school meets the traffic volume warrants for a Traffic Impact Study (TIS) found in Section 2.3.1 of our Standards and Regulations for Subdivision Streets and State Highway Access.

However, the subject school is located in the Southern New Castle County Transportation Improvement District (TID) and is proposed as part of the Town of Whitehall, hereinafter Whitehall. Whitehall is a participating development in the TID. Therefore, as authorized in Section 2.3.4, DelDOT will require that Whitehall participate in the TID rather than doing a TIS. Whitehall has already agreed to participate. The site's trip generation will still need to

be determined for design purposes, but with regard to TIS warrants, from DeIDOT's perspective the TID takes precedence; a separate TIS for the school is not needed.

- The site entrances on Mapleton Avenue and Jimmy Drive must be designed in accordance with DeIDOT's Standards and Regulations for Subdivision Streets and State Highway Access. A copy of the Standards and Regulations is available at [http://www.deldot.gov/information/pubs\\_forms/manuals/subdivisions/pdf/Subdivision\\_Manual\\_Revision\\_1\\_proposed\\_060110.pdf](http://www.deldot.gov/information/pubs_forms/manuals/subdivisions/pdf/Subdivision_Manual_Revision_1_proposed_060110.pdf).
- In accordance with Section 2.14, formerly Section 3.9, of DeIDOT's Standards and Regulations for Subdivision Streets and State Highway Access, DeIDOT may require a Traffic Operational Analysis to verify that Mapleton Avenue and Jimmy Drive will operate acceptably during the morning peak period when children are arriving for school. A possible outcome of that analysis would be parking restrictions on one or both streets.
- DeIDOT anticipates requiring a signal agreement for the intersection of Lorewood Grove Road and Mapleton Avenue, in accordance with Section 2.15.1, formerly Section 3.10.1, of DeIDOT's Standards and Regulations for Subdivision Streets and State Highway Access.
- Under the terms of Whitehall's TID agreement, DeIDOT will be responsible for off-site improvements but may require Whitehall to build improvements in exchange for credit toward what they would otherwise have to pay, up to and including recoupment from funds contributed by other area developers. Presently DeIDOT anticipates requiring Whitehall to improve at least the section of Lorewood Grove Road from Jamison Corner Road to Mapleton Avenue. As the school would be located in Village I and Whitehall will need to build parts of Mapleton Avenue and Jimmy Drive to provide access to the school, DeIDOT anticipate that they will also begin building and selling houses in Village I. In that context, DeIDOT may require Whitehall to make further improvements to Lorewood Grove Road. Whitehall would receive credit for work they do on Lorewood Grove Road but not for work on Mapleton Avenue, Jimmy Drive or other subdivision streets. Any improvements DeIDOT requires on Lorewood Grove Road will need to be addressed through Off-Site Improvement Agreements as described in Section 2.15.2, formerly Section 3.10.2, of DeIDOT's Standards and Regulations for Subdivision Streets and State Highway Access.
- Please be advised that DeIDOT has advertised for comment a comprehensive revision of the Standards and Regulations. The comment period ran through June 30 and DeIDOT could adopt this revision as soon as January 2015. Implementation guidance has not been developed but DeIDOT recommends that the developer'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](http://www.deldot.gov/information/pubs_forms/revisions_to_ASR/index.shtml).
- This project is located within the regulated airspace zones of Summit Airport (EVY), which is a public-use facility. Federal Aviation Regulation (FAR) Part 77 imposes height

restrictions on any structures within these zones. DelDOT requires that the applicant for this project submit a “Proposed Construction/Alteration in Airport Zones Notification Form” in accordance with Delaware Code (2 Del. C. § 602).

This notification form can be submitted during the plan approval process with the local land use jurisdiction, but DelDOT’s Office of Aeronautics is willing to test hypothetical height numbers to prevent any future project complications. Please contact Josh Thomas with the Office of Aeronautics at (302) 760-4834 with any questions or concerns. A copy of the notification form can be found at this address:

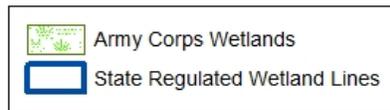
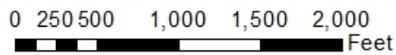
[http://www.deldot.gov/information/community\\_programs\\_and\\_services/airports/pdfs/aviation\\_obstruction\\_review\\_form.pdf](http://www.deldot.gov/information/community_programs_and_services/airports/pdfs/aviation_obstruction_review_form.pdf)

Department of Natural Resources and Environmental Control – Contact Bahareh Van Boekhold 735-3495

### **Wetlands**

- 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 USGS topographic maps. According to our GIS SWMP maps, there are wetlands regulated by the U.S. Army Corps of Engineers. It is possible that there will be impact to these wetlands according to the plans. Please have a delineation done by a wetland consultant and contact the Army Corps of Engineers with any questions regarding the possible wetlands on this parcel. 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/cenap-op/regulatory/regulatory.htm>.

County: New Castle  
PLUS 2014-11-06  
Mapleton Charter School



Map created by: Kitty Bronson  
DNREC Wetlands and Subaqueous Lands

### **TMDLs**

- The project is located in the greater Delaware River and Bay drainage area, specifically within the C & D Canal and Red Lion Creek watersheds. In the Red Lion Creek watershed, the State of Delaware has developed specific Total Maximum Daily Load (TMDL) pollutant reduction targets for nutrients (e.g., nitrogen, phosphorus), and bacteria (under the auspices of Section 303(d) of the Federal Clean Water Act). 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. The TMDL for the Red Lion Creek watershed calls for a 40 percent reduction in nitrogen and phosphorus from baseline conditions. The TMDL also calls for a 38 percent reduction in bacteria from baseline conditions. Although a TMDL has not been developed for the C&D canal watershed to date, the existing TMDL developed for the Red Lion creek should apply to the entirety of the project area. The specific TMDL nutrient and bacterial load reductions for the Red Lion Creek watershed can be viewed in the following web link:  
<http://www.dnrec.delaware.gov/swc/wa/Pages/WatershedAssessmentTMDLs.aspx>

### **Water Supply**

- The project information sheets state water will be provided to the project by Artesian Water Company via a public water system. Our records indicate that the project is located within the public water service area granted to Artesian Water Company under Certificate of Public Convenience and Necessity 97-CPCN-01.
- 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.

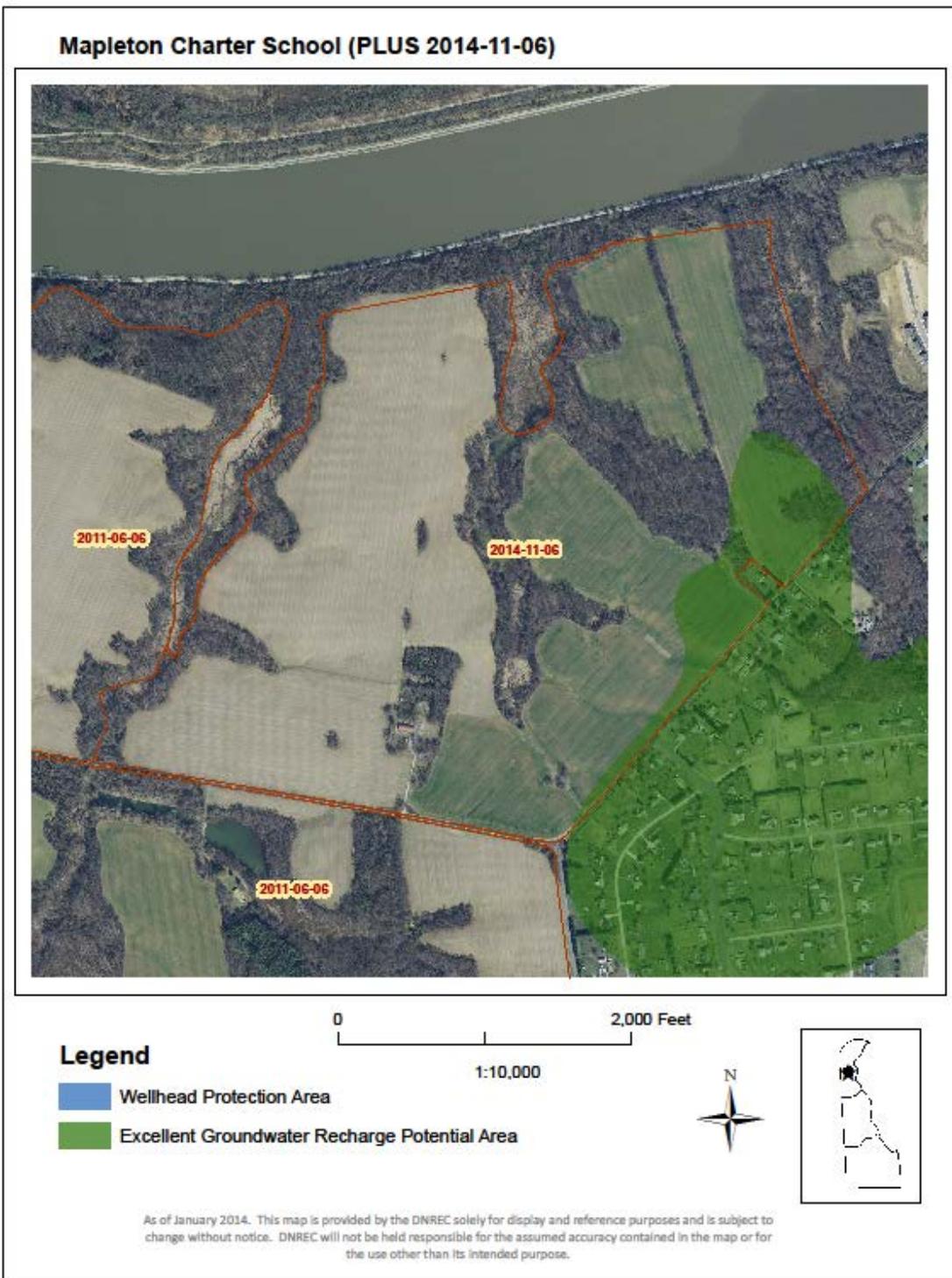
### **Source Water Protection Areas**

- The DNREC Water Supply Section Groundwater Protection Branch (GPB) has reviewed the above referenced PLUS project and determined that a significant portion of the project falls within an excellent ground-water recharge potential area for New Castle County (see attached map). 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 Tally, 1993).

The soils in recharge areas are able to transmit water very quickly from the land surface to the water table. 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.

- GPB recommends:
  - Locate any stormwater management facilities to an area of the parcel outside the excellent groundwater recharge area.
  - The construction phase of stormwater management ponds require 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 ponds 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. Scott, 1991, Methodology for Mapping Ground-Water Recharge Areas in Delaware's Coastal Plain: Delaware Geological Survey Open File Report No. 34, p. 18.  
 Butoryak, Kathleen R. , and Talley, John 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.  
 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. 210 - 218.  
 Schueler, T. R., 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.

**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 New Castle County Dept. of Land Use Engineering Section (Title 7, Delaware Code, Chapter 40 and Delaware Regulations, Title 7, Administrative Code, 5101).

**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:

<b>Table 1: Potential Regulatory Requirements</b>	
<b>Regulation</b>	<b>Requirements</b>
<b>7 DE Admin. Code 1106 -</b> 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.
<b>7 DE Admin. Code 1113 –</b> 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.
<b>7 DE Admin. Code 1135 –</b> 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 minimus levels (See Section 3.2.1)
<b>7 DE Admin. Code 1141 –</b> 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.

<b>7 DE Admin. Code 1144 –</b> Control of Stationary Generator Emissions	Ensure that emissions of nitrogen oxides (NO <sub>x</sub> ), non-methane hydrocarbons (NMHC), particulate matter (PM), sulfur dioxide (SO <sub>2</sub> ), carbon monoxide (CO), and carbon dioxide (CO <sub>2</sub> ) from emergency generators meet the emissions limits established. (See section 3.2). Maintain recordkeeping and reporting requirements.
<b>7 DE Admin. Code 1145 –</b> 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 the website:

<http://www.awm.delaware.gov/AQM/Pages/AirRegulations.aspx>.

### **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 Section**

- 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.
- There are no confirmed leaking underground storage tank (LUST) projects located within a quarter mile from the proposed project area.
- 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.

Delaware State Fire Marshall's Office – Contact John Rudd 739-4394

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 educational 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 Sq. Ft. aggregate will require automatic sprinkler protection installed.
- Buildings greater than 10,000 sqft, 3-stories or more, over 35 feet, or classified as High Hazard, are required to meet fire lane marking requirements
- 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.
- 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 that limit fire department access into and out of the development or 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**

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

- Expect a requirement for a separate turning template plan that verifies vehicles can enter and exit safely on both Mapleton Avenue and Zimmy Drive. The entrance shall be designed for the largest vehicle using the entrance.
- Please 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 May 21, 2014 for the Record/Site Plan and Construction Plan general notes and the Temporary Traffic Control general notes. The notes can be found at [http://www.deldot.gov/information/business/subdivisions/DelDOT\\_Development\\_Coordination\\_Plan\\_Sheet\\_Notes.doc](http://www.deldot.gov/information/business/subdivisions/DelDOT_Development_Coordination_Plan_Sheet_Notes.doc)

#### Department of Natural Resources and Environmental Control – Contact Bahareh Van Boekhold 735-3495

### **Soils Assessment**

- Based on soils survey mapping update (Figure 1), Reybold (ReB) is the most suitable soil (i.e., well drained) for the proposed project. However, DNREC strongly recommends that the applicant avoid the steeply-sloping Sassafras (SaD; 10-15% slopes) soil mapping unit. DNREC further recommends that the applicant avoid all the following wetland associated (hydric) soil mapping units: Fallsington (FgA), Longmarsh (LO), Lenape (Lk), and Longmarsh (LO).



- Have surveys conducted to determine if bog turtles are present. Please note that surveys may confirm presence of turtles, but cannot confirm absence and recommendations to minimize impact to the habitat may be applicable even if bog turtles are not found during surveys. 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. A list of qualified surveyors is available upon request.

For more information, please contact Endangered Species Biologist, Holly Niederriter, at (302) 735-8670.

### **Wetland Buffers**

- The wetlands on this parcel are known to provide habitat to state-rare reptiles and amphibians, including *Hemidactylium scutatum* (four-toed salamander) and *Regina septemvittata* (queen snake). The four-toed salamander typically breeds in forested wetlands, bogs, and spring seepage areas, but upland buffer areas around wetlands are equally important habitat. Additionally, the queen snake feeds solely on crayfish, which require unpolluted streams for survival. Stream degradation has been known to lead to the deterioration or complete elimination of crayfish populations. As such, efforts should be made to avoid direct impacts to wetlands (including forested 'isolated' wetlands) and to maintain as large an upland buffer as possible (300 feet is preferable). This buffer should be comprised of the existing vegetation, not of maintained lawn areas.

### **Wildlife Area**

- The proposed project is within ½ mile of the boundary of Chesapeake and Delaware Canal Wildlife Area, a State Wildlife Area managed by the Division of Fish and Wildlife. To ensure that the quantity and quality of wildlife habitat in the State Wildlife Area is not negatively affected by development activities, please contact the Regional Wildlife Biologist, Eric Ludwig, at 302-834-8433. Additionally, the developer should be aware that people using the property in question could be subject to the effects of legal hunting activities in the Wildlife Area, such as firearm noise or dogs barking when pursuing game.

### **Nuisance Waterfowl**

- Please note that 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, DNREC recommends 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. 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](mailto: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 not been established for the C&D canal & Red Lion creek watersheds to date. DNREC strongly encourages the applicant to reduce nutrient and bacterial pollutants through voluntary implementation of the following recommended BMPs:
  - A United States Army Corps of Engineers (USACE) approved field wetlands delineation is strongly recommended before commencing any development activities on this parcel(s). The USACE can be reached by phone at 736-9763.
  - 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 (including ditches) and wetlands (field delineated and approved by the USACE and the State of Delaware's Subaqueous Lands section).
  - As mentioned previously in the soil assessment section, it is strongly recommended that the applicant obtain a licensed (State of Delaware Class D) soil scientist to make a site-specific evaluation of the soils (e.g., presence/absence of hydric soils and steeply-sloping topography) on this site. DNREC strongly recommends avoiding construction in hydric soils and soils in steeply-sloping topography (e.g., >10% slopes).
  - Calculate post-construction surface imperviousness with all forms of created surface imperviousness (e.g., rooftops, driveways, parking lots, sidewalks, open-water storm water management structures, and roads) included in the calculation.
  - Wherever practicable, the use of pervious paving materials instead of conventional asphalt and concrete. Pervious paving materials mitigate occurrences of flooding while reducing pollutant runoff. DNREC especially recommends the use of pervious paving materials in areas containing a parking lot(s).
  - Use of green-technology storm water management structures (in lieu of open-water management structures) and raingardens as BMPs to reduce nutrient pollutant impacts. Please contact Lara Allison for further information about raingardens at 739-9922.
  - DNREC strongly encourages the applicant to 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 encourages the applicant/developer use this protocol to help them design and implement the most effective BMPs. Please contact Jen Walls or John Martin 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**

- Site Investigation Restoration Section (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**

- New schools 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. New Castle County, Delaware is classified as non-attainment for not meeting federal and state 8-hour ozone standards. Compared to Kent and Sussex Counties, short term 1-hour average peak ozone levels are usually highest in New Castle County, as well,
  - The emission of greenhouse gases which are associated with climate change, and
  - The emission of air toxics.

- Air emissions generated from new 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, 8<sup>th</sup> Edition. Table 2 represents the actual impact the Mapleton Charter School project may have on air quality.

<b>Table 2: Projected Air Quality Emissions for Mapleton Charter School</b>					
Emissions Attributable to Mapleton Charter School (Tons per Year)	Volatile Organic Compounds (VOC)	Nitrogen Oxides (NO <sub>x</sub> )	Sulfur Dioxide (SO <sub>2</sub> )	Fine Particulate Matter (PM <sub>2.5</sub> )	Carbon Dioxide (CO <sub>2</sub> )
Mobile	0.93	1.22	*	*	*

(\*) Indicates data is not available.

- Note that emissions associated with the actual construction of the educational facility, 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.
  
- 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 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.
- 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<sub>x</sub> 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 nearby 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 Mapleton Charter School project.

Delaware State Fire Marshall's Office – Contact John Rudd 739-4394

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

Division of Public Health – Contact Laura Saperstein 744-1011

The Delaware Division of Public Health (DPH) is pleased to be able to participate in the PLUS application process. In keeping with its mission to protect and promote the health of all people in Delaware, DPH looks for opportunities to encourage and enhance our population's health behaviors that will result in healthy people and healthy communities.

Community design can impact the health of a population. Studies show that persons in lower-income communities, the elderly, and children often suffer more from consequences of inadequate land-use and transportation. Additionally, physical activity has a direct correlation to many chronic diseases, including hypertension, diabetes and obesity. In 2012, 39.1% of Delawareans reported a BMI of "overweight," and 26.9% reported a BMI as "obese." To that end, DPH looks to make recommendations for land-use that can empower Delawareans to make good health behaviors a part of their daily lives.

- DPH is pleased to see the many different areas in which the Mapleton Charter School can contribute to the Whitehall community's health. Specifically this site has the opportunity to facilitate active transportation for school children by connecting to existing subdivisions: Airmont, Mount Hope, and Canal View at Crossland. Additionally, this site has the potential to further facilitate active recreation if it aligns with the identified priorities in the Statewide Comprehensive Outdoor Recreation Plan regional priorities.
- The Mapleton Charter School has the opportunity to increase positive health behaviors for its community by incorporating the following recommendations into its land development proposal:
  - Consider including sidewalks and bike paths giving the community the opportunity to incorporate physical activity into their daily routines.
  - Consider including safety-lighting for open spaces (athletic fields), as well as for sidewalks or paths additionally facilitating the ability of the community to incorporate physical activity into daily routines.
  - Consider joint-use agreements as part of the school's wellness plan.
  - Consider a Safe-Routes-to-School program as part of a Comprehensive School Physical Activity plan as well as including bike parking for those that can safely commute to 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.**

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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 cursive script that reads "Constance C. Holland". The signature is written in black ink and is positioned above the typed name and title.

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

CC: New Castle County