



STATE OF DELAWARE
**DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL**
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DOVER, DELAWARE 19901

Office of the
Secretary

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Secretary's Order No. 2008-W-0049

**Re: Application of CDB Property, LLC for a Subaqueous Lands Permit to
Reconstruct and Retrofit Existing Road and Utility Crossings at 520 Valley
Road, Hockessin, New Castle County**

Date of Issuance: September 19, 2008

Effective Date: September 19, 2008

Under the authority granted the Secretary of the Department of Natural Resources and Environmental Control ("Department" or "DNREC") under *7 Del C. §6003*, the following findings, reasons and conclusions are entered as an Order of the Secretary. This Order considers the application of CDB Property, LLC ("Applicant") for a subaqueous lands permit under Title 7 Chapter 72 in order to reconstruct and retrofit a road and utility crossing culverts ("Project") to an unnamed and non-tidal stream that is a tributary of Mill Creek, which is a tributary of the White Clay Creek near Hockessin, New Castle County. The Project is needed to construct a Goddard School at 520 Valley Road, Hockessin on approximately vacant 5.5 acres. The application seeks to replace the existing 24 inch diameter (lower) and 18 inch diameter (upper) concrete pipes with one 30 inch diameter (lower) and two 24 inch diameter (upper) concrete pipes, to widen and improve the existing 20 feet wide dirt and grass road with a 25 feet wide paved roadway, and to install a plunge pool and protect the outlet from erosion ("Project").

On August 12, 2008, the Department held a public hearing at Hockessin Memorial Hall before the Department's presiding hearing officer, Robert P. Haynes, who

prepared a Report of recommendations dated September 10, 2008, a copy of which is attached hereto and incorporated herein. The Report recommends approval of a permit.

I adopt the Hearing Officer's Report and its review of the record and recommendations. The public comments raised numerous issues and the Department investigated them to determine if they warrant denying or conditioning the permit. The Report concludes that most of the issues the public comments raised related to the Project's purpose, which is to benefit the proposed land development and future use as a pre-school. I agree that this Department has only the authority granted by the General Assembly in Chapter 72, and that all the concerns with possible adverse impacts on subaqueous lands have been addressed. The Department's experts with the Department's Division of Water Resources, Wetlands and Subaqueous Lands Section ("WSLS") prepared a comprehensive response document to the public comments, which is attached to the Report. The experts also recommend permit conditions to mitigate the permanent loss of the natural stream bed and to restore for the temporary harm caused by the construction.

The Department is sympathetic to many of the public's concerns with the proposed development of vacant land, but these concerns are not within the scope of the Department's Chapter 72 authority. Instead, the concerns are with land development in general and developing a vacant parcel into a commercial use adjacent to a residential neighborhood. The land development issues are within the authority of county government and other state agencies. Under Chapter 72, the Project will improve the capacity of the culverts to transport water, which should alleviate the concerns of persons who live upstream. One of their valid concerns was that the Project would impede water

flows, particularly during storms. The Department hereby approves the permit, but also will impose permit conditions to mitigate the harm that will occur from the loss of the stream bed and the temporary harm to the stream from the construction. The installation of properly sized culvert pipes, as a replacement of existing decayed road crossings with undersized pipes, would be appropriate even if there was no land development because the new pipes will ensure proper water flow and should lower the risk of upstream flooding. The Department will impose reasonable permit conditions that should address some of the aesthetic concerns raised by adjoining property owners.

In sum, as more fully described in the reasons and findings in the Report, I adopt and direct the following as a final order of the Department:

1. The Department has jurisdiction under its statutory authority to make a determination in this proceeding;
2. The Department provided adequate public notice of the proceeding and the public hearing, and held the public hearing in a manner required by the law and its regulations;
3. The Department considered all timely and relevant public comments in making its determination;
4. The record of decision supports the issuance of the permits based upon the application, and such reasonable conditions that the Department official delegated to prepare the permits determines are necessary to protect the environment and public health;
5. The duly authorized Department official shall timely prepare and issue the permits consistent with this Order; and

6. The Department shall provide notice of this Order to the persons affected by this Order, as determined by the Department, including those who participated in the hearing process.

s/John A. Hughes
John A. Hughes
Secretary

HEARING OFFICER'S REPORT

TO: The Honorable John A. Hughes
Secretary, Department of Natural Resources and Environmental Control

FROM: Robert P. Haynes, Esquire
Senior Hearing Officer, Office of the Secretary
Department of Natural Resources and Environmental Control

RE: Application of CDB Property, LLC for a Subaqueous Lands Permit to Reconstruct and Retrofit Existing Road Crossings and Install New Utility Crossings at 520 Valley Road, Hockessin, New Castle County

DATE: September 10, 2008

I. BACKGROUND AND PROCEDURAL HISTORY

This Report considers the administrative record, including the public comments in the public hearing record, and makes recommendations to the Secretary of the Department of Natural Resources and Environmental Control (“DNREC” or “Department”) on the February 28, 2008 application submitted by CDB Property, LLC (“Applicant”) to the Department’s Division of Water Resources (“DWR”), Wetlands and Subaqueous Lands Section (“WSLS”). The application was submitted pursuant to Title 7 Chapter 72 of the Delaware Code, *Subaqueous Lands Act*, 7 Del C. Chap. 72 and the Department’s *Regulations Governing the Use of Subaqueous Lands*, 7 DE Admin. Code §7504 et seq. (“Regulations”).

The Applicant seeks permission to: 1) reconstruct and retrofit culverts at an existing road crossing 2) to install new water and sewer utility lines, and 3) to construct a plunge pool at the outlet of the three new replacement culvert pipes (“Project”). The Project will disturb private subaqueous lands underneath an approximately three foot wide unnamed tributary of Mill Creek. The Project is part of Applicant’s planned construction of a 10,000 square foot building, playground, fencing, stormwater management system, and 37 vehicle parking lot. The construction will be The Goddard School, a preschool center for approximately 160 children.

The Project will be on Applicant's 5.79 acre parcel located at 520 Valley Road, Hockessin, New Castle County.

The Project's road crossing of the stream would replace the existing 18 inch diameter 20 foot long and 24 inch diameter 20 foot long pipes. These culverts are in deteriorating condition and underneath a 20 foot wide dirt farm road. The Applicant proposes to reconstruct the road crossing to meet Department of Transportation's approved paved roadway standards for the proposed use. The new roadway would be 25 feet wide, and under normal conditions the stream would run through a 30 inch diameter 63 foot long pipe. Under storm conditions the water would also run through two new 24 inch diameter, 54 foot long pipes above the larger pipe. At the outlet of the culvert the Applicant proposes to install a plunge pool designed to protect the stream banks from erosion, particularly during storms. The Project also would install water and sewer lines underneath the stream bed.

The culvert would eliminate approximate 40 feet of the existing natural stream bed and replace it with the culverts. The reason for the additional culvert length is to allow for a more gradual slope from the roadway to the stream the culverts' intake and outlet locations. The proposed roadway's elevation would be approximately two feet above the existing road. The Project's construction temporarily would disturb additional riparian areas within ten feet of the upstream property line and reduce the shade trees and other habitat that shelter the stream.

The culverts now receive water from an approximately 21 acre watershed, but were installed before the Department regulated such structures. The new culverts are designed to handle the capacity of water from a 100 year storm. The Project should improve water flow considerably and prevent any water to back up at the road crossing, which may cause flooding upstream. The existing pipes' design capacity allows 57.62 cubic feet per second flow while the proposed pipes' capacity will allow 135.73 cubic feet per second flow, or a 135% increase.

The Project's land was once part of the Hampton Pointe subdivision that is upstream of the Project. Hampton Pointe has 36 and this development's stormwater collection system empties into a stormwater retention pond, which is below a stream road crossing that provides the only access road into the development. The water from the pond flows through an outlet into the stream and travels a short distance to Applicant's property. The current distance along the stream from Applicant's upstream property line to the existing culverts is approximately 40 feet, but the Project will reduce this distance to 20 feet.

The Applicant's parcel once had structures on it, including a mushroom farm depicted on a 1973 plans. All the structures were removed in 2000-2004. The parcel is now the subject of a pending minor subdivision plan, which currently is before New Castle County in order for Applicant to build the Goddard School. The County's approval is waiting for the Department's action on the subaqueous permit.

The Department published public notice of the permit application, and received a timely meritorious request for a public hearing from a property owner in the adjoining residential development of Hampton Pointe, which is upstream from the Project. The Department held a duly noticed public hearing on August 12, 2008 at the Hockessin Memorial Hall, in Hockessin, New Castle County. Several persons, including representatives of the Hampton Pointe property owners association, Hampton Pointe Service Corporation, attended the public hearing and provided written and oral comments. At the request of members of the public, the public comment period was kept open until the receipt of additional written material, which was provided after the hearing on August 13, 2008. This hearing officer requested additional technical assistance from WSLs, which was provided in a memorandum attached hereto as Appendix A.

This Report considers the permit application, relevant information in the Department's files, and the public comments, and applies the applicable laws and regulations in order to make a recommendation to the Secretary on whether to issue a permit or any permit conditions. I also conducted a site inspection of Hampton Pointe development and the parcel on which the Project would be located.

II. SUMMARY OF THE PUBLIC HEARING RECORD

The public hearing record contains a 76 page verbatim transcript of the public hearing and the documents introduced as exhibits at the public hearing. The hearing record¹ contains the application and related correspondence, the public notices, and the written public comments the Department received.

Present at the public hearing from WSLs were its Section Manager, Laura Herr, and the Environmental Scientist responsible for this particular application, Joanne Lee. Mario J. Gangemi of Duffield Associates, and Tom Cekine represented with Applicant.

The public comments opposed the issuance of a permit on several grounds, including the Project's possible adverse impact on groundwater, surface water, stormwater management, endangered species, aesthetics, prior usage of the property as a mushroom farm and possible contamination from such usage and traffic congestion from an estimated 200-300 vehicular use of the roadway and the Hampton Pointe neighborhood's entrance when the school is open.

III. DISCUSSION AND REASONS

This discussion will address certain issues raised by the public comments and the permit application. I have considered all the relevant public comments even if not specifically mentioned in this Report. I rely on the WSLs technical response document, which provides an excellent review of the issues, and it is hereby incorporated as part of this Report. WSLs also

¹ The Department does not have an obligation to develop the public hearing record and remains neutral on the merits of a pending permit application until after the public hearing.

has recommended issuance of a permit, subject to reasonable permit conditions. I have reviewed the recommendations and conditions and recommend that the Secretary issue the requested permit subject to the conditions recommended by WSLS.

The real underlying issue raised by the public comments was the concern of residents of Hampton Pointe that the proposed development will eliminate vacant land and allow the parcel to be used as a commercial preschool center. This concern is valid because the change will have an impact on the adjoining property owners, who now benefit from the open space. The concern also is based upon the proposed Goddard School's impact on traffic conditions and the likely 200-300 vehicle trips each school day. The residents noted that the traffic from the Goddard School would have to turn left on Valley Road and towards the Hampton Pointe development in order to access Route 7, which likely will be used by many who will travel to the school. This proposed change from vacant land into a commercial development will undoubtedly impact the environment in several respects, including many of the considerations raised in the public comments, such as loss of habitat and covering the land with impermeable surfaces.

The problem with the public comments is that they were based upon issues not within the scope of what the Department determines when it decides to issue a subaqueous permit, particularly a permit that seeks to replace an existing road crossing with a new and improved crossing. The Department operates under the limited authority the General Assembly had granted it in the Subaqueous Lands Act. The Department is not authorized to undertake a wide ranging review of all the environmental impacts that may occur from the proposed development of the Applicant's property. As noted in WSLS' memorandum, the commercial development of vacant land does have some environmental impacts, but the Department's role in this proceeding is to review the environmental impacts on the subaqueous lands, which include the temporary impacts during construction and the permanent impacts from the culverts. Instead of the

Department having a role in commercial development of vacant land, the laws enacted by the General Assembly delegated to New Castle County government the authority over land use and to the Department of Transportation the authority to regulate vehicular traffic issues. Thus, the public comments on the issues of the commercial development and traffic should be addressed to these governmental agencies and not to the Department, which is powerless to provide the type of relief requested by most of the public comments.

The only environmental permit that is within the jurisdiction of the Department is the subaqueous lands permit. The Department is to review the permit application pursuant to the Subaqueous Lands Act and the Department's regulations promulgated under the Act. Under this limited authority, I find no basis to deny the requested permit based upon the public comments or my own review of this record.

I agree that the proposed commercial development and use as a Goddard School will impact the six residential properties that abut the Applicant's parcel most directly and indirectly impact the remaining 30 other homes in Hampton Pointe with the increased traffic. I also find that the Department's review should be based as if the Project was a stand alone construction, as opposed one related to constructing the Goddard School. Under this analysis, only the roadway crossing improvements and the three culverts underneath it, and the installation of water and sewer lines are the subject area of inquiry. This analysis would result in a recommendation that the proposed permit should be issued because of its considerable benefit. The Project will improve the present culvert's ability to transport water, which will reduce the risk of a dam forming at the road crossing that could back water up onto the upstream property owners and cause flooding.

The Regulations require the Department to consider alternatives to the Project. I find that this language should not be used to broaden the scope beyond the Project. I agree that removing

the culverts would be an option, but I find that the road crossings are vital to any commercial use of the property. The property can only access to Route 7 through wetlands, including another unnamed tributary of Mill Creek, and this would have more of an adverse environmental impact than use of an existing road crossings. The road crossings could be built at a more downstream location, but that would be more disruptive because it would entail new road crossings. Such a downstream location may not be possible due to the proximity of Route 7 intersection with Valley Road. Moreover, moving the road crossings will not satisfy the underlying objection from the public comments. The only other way for the property to access Valley Road or Route 7 would be thorough others' properties, but that also is not a viable option. Thus, there is no viable alternative to the Project.

The Department's experts recommend approval of the permit because the application satisfies the Department's Regulations. The experts carefully considered the various issues raised, but found no reasonable connection to the Project. The groundwater, surface water, drinking water and stormwater impacts all relate to the development of the parcel other than the Project itself. The experts concluded that the requested subaqueous lands permit will not adversely impact any of these considerations, but seek to mitigate the reduction in the natural stream bed and to restore the area disturbed by the temporary construction. The experts propose as a permit condition an offset requiring the Applicant to submit a plan to ensure that the riparian buffer will be restored from the adverse consequences of the temporary construction and that the Applicant also extend the riparian buffer area by 1,000 square feet to protect it from development and enhance it with plantings of native trees and shrubs to provide shade for the stream and aesthetic barrier. This proposed permit condition should satisfy some of the concerns raised to the extent they really were based upon the Project, and not the construction of the Goddard School. I agree that the reduction in the natural stream bed is a loss to the public of the benefits

from this substantial resource that should be offset through requiring improvements to the riparian buffer area that will improve the stream's water quality and aquatic habitat.

WSLS also recommends a low water channel be installed to preserve aquatic life during periods of low water. Again, I agree with this permit condition and recommend its adoption as consistent with maintaining the aquatic life in the stream during periods of low water flow.

WSLS' memorandum cites the Regulations that require the potential effect on the public with respect to various factors.² WSLS finds "aesthetic enjoyment" was the only one possible factor that may be applicable to the public comments' general and specific objections. I agree. The loss of open land to any development will change the aesthetics enjoyed by the neighbors. This loss of aesthetic enjoyment is the view of open land; however, the Project, as limited to the road crossings, is not the real source of the loss. Instead, it is from the proposed development of vacant land in general and proposed use as the Goddard School in specific. The proposed changes will not alter the adjoining property owners' aesthetic enjoyment too much because the culverts will be underground and largely hidden from view. The Department's experts also have recommended requiring landscaping buffer of the riparian area in order to offset the permanent loss of the stream bed and to restore the temporary loss of shade trees that now protect the stream from over exposure to sunlight. The construction work will be visible and disturb the adjoining property owners, but necessary for any development of the property. This disturbance will be temporary in duration. Moreover, the benefited from the aesthetic enjoyment of the open land is not one that could be expected to last because when the Hampton Pointe residents purchased their properties they had actual or constructive knowledge that Applicant's land could be developed.

² The Regulations apply to many different types of subaqueous lands activity that require a permit, such as dredging, shoreline restoration, docks, and any other type of construction activity in the subaqueous lands.

In sum, I find that there is no reason to stop the land development by denying the requested permit. The proposed development is relatively benign compared to other commercial uses that New Castle County's zoning ordinances may allow. Thus, while the Department is sympathetic to the public's concerns with environmental harm and has investigated the many objections to the Project, the Department will not let its subaqueous lands permit procedures become a method to stop or delay an otherwise lawful and appropriate Project that will improve the conditions and reduce the likelihood of flooding from insufficient capacity in the existing culvert pipes.

I find that the recommended permit conditions are reasonable and well-supported. WSLs recommends that the Applicant submit to WSLs a proposed compensation plan in proposed permit condition 4. The purpose of this permit condition is to maintain the riparian buffer around the plunge pool and between the culverts' intake to the upstream property line in a natural setting with appropriate landscaping and planting native species to enhance the natural state of the area. This is consistent with the public comments that requested some relief from the visual impact of the development, but obviously this relief is far less than the requested relief that sought to deny the Applicant a permit.³ I find and recommend that the Department issue a subaqueous permit as an appropriate exercise of its authority over Delaware's subaqueous lands, subject to reasonable permit conditions that will require the compensation for the use of the subaqueous lands through a compensation plan for the landscaping and plantings that would be approved by the Department.

IV. RECOMMENDED FINDINGS AND CONCLUSIONS

Based on the record developed, I find and conclude that the record supports approval of issuing a permit to construct the three culverts at the existing and improved road crossing

³ Should the Department deny the requested permit, then such action likely would be reversed on appeal.

location, with a plunge pool at the outlet and to install two utility crossings, subject to such reasonable permit conditions recommended by the Department's experts. I recommend the Secretary adopt the following findings and conclusions:

1. The Department has jurisdiction under its statutory authority to make a determination in this proceeding;

2. The Department provided adequate public notice of the proceeding and the public hearing in a manner required by the law and regulations;

3. The Department held a public hearing in a manner required by the law and regulations;

4. The Department considered all timely and relevant public comments in making its determination;

5. The Department shall issue Applicants a permit subject to the reasonable general and specific permit conditions recommended by WSLs; and

7. The Department shall serve either by mail or email a copy of this Order on each person who participated in the public hearing,

[s/Robert P. Haynes](#)

Robert P. Haynes, Esquire
Senior Hearing Officer

MEMORANDUM

To: Robert Haynes, Esquire, Hearing Officer

Through: Kathy Bunting-Howarth, Director, Division of Water Resources
Laura Herr, Section Manager, Wetlands and Subaqueous Lands Section

From: Joanne Lee, Environmental Scientist
Division of Water Resources, Wetlands and Subaqueous Lands Section

Date: August 28, 2008

Subject: Wetlands and Subaqueous Lands Section Findings – CDB Property (Goddard School) – Subaqueous Permit Application SP-080/08

BACKGROUND INFORMATION

The Goddard School submitted a subaqueous lands permit application to the Wetlands and Subaqueous Lands Section (WSLS) for activities in an unnamed tributary of Mill Creek on March 4, 2008. The Goddard School site is located at 520 Valley Road, Hockessin, New Castle County, Delaware. This site is situated west of Limestone Road, north of Valley Road and cattycorner to the Lantana Square shopping center. The project under WSLS review consists of the following work in an unnamed tributary to Mill Creek:

- 1) the replacement and lengthening of an existing culvert;
- 2) the installation of two utility lines; and
- 3) the construction of a plunge pool at the outlet of the culvert.

The existing culvert at the project site includes an approximately 20 foot long, 24-inch diameter base flow pipe and an approximately 20 foot long, 18-inch diameter storm flow pipe. The base flow pipe is situated on the streambed surface and carries normal flows. The storm flow pipe is placed at a higher elevation in the stream, so that only high flows move through it. The existing elevation of the road is 281 feet. The culvert is currently in poor condition with significant erosion of the cover soil around the pipes and appears unsafe for pedestrian and vehicular traffic. The proposed culvert consists of a 63 foot long, 36-inch diameter base flow pipe and two 54-foot long, 24-inch diameter storm flow pipes. The proposed road elevation is 282.8 feet.

A public notice of the proposed project was placed in The News Journal and the State News on April 23, 2008. Public comments and a request for a public hearing were received by the WSLS. A public hearing was held on August 12, 2008. The commenters expressed

numerous concerns about the development, including traffic problems, the aesthetic impact on the Hampton Pointe community, the possibility of stormwater run-off impacting the community, and the effect on the Hampton Pointe stormwater management pond. Concerns were also voiced about impervious surfaces, stormwater retention, groundwater recharge and drinking water supplies; impacts to wetlands, the floodplain and the streams; contaminant issues from the mushroom farm; and the structural strength of the soils for construction.

The WSLs' evaluation of the project is limited to the public use and environmental impacts associated with the in-stream work. Many issues raised by the public are significant environmental issues, such as drinking water impacts, groundwater recharge, and stormwater management. However these issues are addressed by the New Castle County Department of Land Use and are not subject to this review. Traffic problems and soil structural strength are evaluated by governmental entities other than the WSLs. Wetland impacts are subject to review by the Army Corps of Engineers. However, based on a review of the site plan, no wetlands are to be impacted by the development. It is within the authority of the WSLs to evaluate impacts to the public and impacts to the stream and environment associated with construction in the stream.

SUBAQUEOUS LANDS REGULATORY REVIEW

The State of Delaware has jurisdiction over the in-water portions of the Goddard School project in accordance with 7 Del. C., Chapter 72, the Subaqueous Lands Act (Act), and the "Regulations Governing the Use of Subaqueous Lands" (Regulations). The regulated activities include all structures below the ordinary high water line in the stream and include the installation of the new culvert, pipe lines and plunge pool.

Public Use Impact Review

Section 3.01 A of the Regulations requires that the WSLs consider how the public interest will be affected by the proposed use of subaqueous lands. This review is required to evaluate impacts to the public and the potential for the impacts to be minimized or avoided. Because the WSLs authority is limited to evaluation of the impacts of the stream work, the WSLs response to the public's concerns is limited to impacts associated with the stream work and does not address the entire development.

The proposed in-stream work on the Goddard School is in private subaqueous lands, owned by the applicant. The waters are not publicly owned lands and the State is not conveying land or interests to the applicant. (Section 3.01.A.1 and 2)++.

Section 3.01.A.3 requires the WSLs to consider "the potential effect on the public with respect to commerce, navigation, recreation, aesthetic enjoyment, natural resources and other uses of the subaqueous lands." The Goddard School property is located immediately adjacent to and downgradient of the Hampton Pointe Subdivision. Neighbors from this community have stated their concerns about the loss of aesthetics due to the development. While undoubtedly, the community's concern addresses the entire development, only the work in the stream is subject to the WSLs review. The proposed culvert is larger and will carry more traffic than the existing degraded farm culvert. It will be located approximately

20 feet from the property line, with construction disturbance within 10 feet of the property boundary, whereas the existing culvert is approximately 40 feet from the line. There is a likely aesthetic impact to the neighborhood associated with the construction in the stream. However, the need for the culvert must be weighed against public impact. Because of the necessity of the crossing for the development, the WSLs recommends that the developer mitigate for the impact by providing landscaping to minimize aesthetic impacts to the community.

Section 3.01.A.4 seeks to evaluate the “disruption of the public use” of the stream. There is likely minimal public use of this stream and disruption to public use is not anticipated.

Sections 3.01.A.5, 6 and 7 require an evaluation of whether the applicant’s purpose can be avoided, minimized or offset. Because all access to the site is bounded by streams, a road crossing is necessary for any development of land. The location of the proposed culvert minimizes impacts to waters and wetlands by utilizing a portion of the stream already disturbed by an existing crossing. The multiple pipe design of the culvert, with one pipe to carry base flows and elevated pipes to carry storm flows is recognized by the WSLs as an environmentally preferred design and will minimize the effect. However, the crossing will result in the loss of the natural stream bed and habitat due to its increased length. The WSLs recommends that these stream impacts be offset by riparian mitigation, such as tree planting to provide shade to the stream and the creation of a larger riparian barrier. Leaves from the trees provide a primary food resource into the stream ecosystem and the shading from the trees improves dissolved oxygen levels in the stream. The increased plantings will also offset aesthetic impacts due to the culvert crossing.

Section 3.A.8 requires an evaluation of “the extent to which the public at large would benefit from the activity and the extent to which it would suffer detriment.” Hampton Pointe homeowners have commented on the potential negative impacts on their community. The WSLs evaluated the potential impacts to the storm water management pond and drainage in the vicinity of the stream and associated with the construction in the stream.

Drainage - The Hampton Pointe stormwater management pond is located at the head of the stream and appears to provide much of the base flow for the stream. The road crossing will be located approximately 40 feet downstream from the pond outfall. The proposed culvert design increases the road elevation by approximately 2 feet. This, at first glance, suggests that water elevations during storm events may back up to higher elevations behind the culvert, which could then affect low lying property in proximity to the culvert. However, the culvert will have a larger cross-sectional area of culvert pipes, which reportedly will offset the increased elevation of the road. Based on an engineering analysis provided by Duffield Associates, flows during storm events will actually be lower during a 100-year storm with the installation of the new culverts. This would suggest that flooding in backyards in close proximity to the culvert would be decreased.

Stormwater Management Pond - Impacts to the Hampton Pointe stormwater management appear to be unlikely because water flow into the pond is from upgradient runoff and drainage from the Hampton Pointe community and then to the Goddard School. Water on the Goddard School site will flow downstream, away from the stormwater management pond. The culvert is designed so that backwater effects are less than existing conditions, so additional impacts to the pond are not anticipated.

The WSLs does not anticipate that the road crossing will negatively affect the stormwater management pond or increase flooding on nearby properties because the culvert has been designed to increase flow during storm events. However, the WSLs will require that the culvert be constructed and maintained to avoid impact to the community.

Environmental Impact Review

Section 7203(b) of the Act and Section 3 of the Regulations requires an environmental evaluation of the impact on subaqueous lands by a proposed activity. This evaluation includes a review of the project's impact on aquatic organisms, habitat, water quality, hydrology, and sediment transport. The review also evaluates the structures' material and technology.

Aquatic Habitat and Design Review

The proposed culvert is located on a small tributary to an unnamed tributary of Mill Creek. Based on historical aerial photography, the 1970 Soil Survey of New Castle County, and topography depicted in the 1904 and 1993 U.S.G.S Topographic maps, the subject stream is located at the base of a drainage way that runs parallel to Valley Road. Currently a stormwater management pond is located upstream of the Goddard School site in the Hampton Pointe subdivision. This pond appears to currently contribute the majority of the surface water to the subject stream. Because the pond is elevated relative to the stream, it effectively terminates the upstream movement of aquatic organisms, with the exception of flying insects. This lack of continuity limits the habitat value of the stream.

The proposed culvert design is one typically approved by the WSLs for small stream crossings. The existing culvert has two pipes, an elevated pipe and a base flow pipe. The base flow pipe has a perched outfall pipe which discharges above the stream bed and creates a waterfall effect at the outlet. Perched culverts can limit upstream movement of aquatic organisms and may contribute to stream erosion. The proposed culvert is designed with one 36-inch base flow pipe and two elevated pipes to carry storm flows. This design enables the base flow to be concentrated through the one pipe, rather than spreading out as sheetflow over the surface area of large adjacent pipes. Shallow water depths associated with sheetflow can also act as a barrier to movement of aquatic organisms. In order for this design to be effective, the disturbed portion of the channel in the stream must maintain a low flow channel. The WSLs will require that a low flow channel be reconstructed in the disturbed stream channel.

The proposed culvert will be approximately 40 feet longer than the existing culvert. The additional length of the culvert eliminates approximately 40 feet of existing natural stream bed material and habitat. Disturbance from construction will also impact the riparian corridor. The WSLs will require that the applicant commit to a mitigation plan to recreate riparian buffer plantings to offset the environmental impacts from the stream disturbance.

Species Review

The Delaware Natural Heritage Program completed a site review on September 4, 2008. They did not find any evidence of rare, threatened or endangered species and found the site to be degraded and vegetated with numerous non-native species. The site is not identified as a Natural Resource area or a Critical Resource Water.

Site Contamination

One commenter at the public hearing suggested that contaminants, particularly cyanide and arsenic, were present at the site due to mushroom farming. The site had been used for mushroom production from 1937 to 2002. Mushroom farms, like many farming operations, may employ pesticides in the production of its product. However, it does not appear that cyanide or arsenic is typically associated with mushroom production. A Phase I Environmental Site Assessment was conducted by Duffield Associates in 2008. During that evaluation no mushroom soil was noted on the soil surface or in the geotechnical subsurface exploration. No recommendations for soil sampling were included in the Phase I document.

The WSLs will require sediment and erosion controls to minimize sediment erosion into the stream during construction of the road crossing. Land disturbing activities in the adjacent uplands require a sediment and stormwater plan to be approved by New Castle County. The WSLs recommends that New Castle County be notified of the historic presence of a mushroom farm on the site.

CONCLUSION

The WSLs finds that the Goddard School Subaqueous Lands permit application to construct a road crossing, a plunge pool and two utility lines in an unnamed tributary to Mill Creek can comply with the Regulations provided that any permit issued is conditioned to offset impacts. This structure will provide necessary access for the Goddard School and has been designed to minimize some impacts from the structure. However, the structure will also create some negative impacts to the stream and the public and these negative impacts should be offset.

The following are public and environmental issues associated with the project and suggestions for compensation:

- In order to offset negative impacts to the stream channel and stream habitat, the WSLs recommends that the existing riparian buffer be expanded using native vegetation.
- The culvert will be constructed within 20 feet of the property line with the Hampton Pointe subdivision and this proximity of the crossing and the increased size of the culvert will likely have a negative impact on the aesthetics of the Hampton Pointe subdivision.

In order to offset the aesthetic impact to the community, the WSLS recommends that vegetation be planted to create a visual screen for the community.

- The community has concerns that installation of the culvert will cause unforeseen impacts on the community stormwater management ponds and backwater effects creating additional flooding. The WSLS does not anticipate that these concerns will occur because the culvert has been designed to increase flow during storm events. However, the WSLS recommends that the culvert be constructed and maintained to avoid impact to the community.

Comments submitted to the WSLS that were not associated with the impact to the stream and those not within the purview of the Subaqueous Lands Act were not reviewed by the WSLS. We recommend that the appropriate agencies review other issues of concern brought forth by the community including water recharge, stormwater management, contaminants, site run-off and structural stability of the soils.

DRAFT