MARYLAND LEAGUE
OF CONSERVATION VOTERS

To: Howard County Council
From: Benjamin Alexandro, MD LCV
Date: 6/20/2016
Re: Testimony for Howard County Financial Assurance Plan

Good evening Honorable Howard County Councilmembers,

My name is Ben Alexandro. I am the water policy advocate for the Maryland League of Conservation Voters, and representing over 550 supporters in Howard County and many more voters. I am also the Maryland State Lead for the Choose Clean Water Coalition, a coalition of over 200 nonprofits throughout the mid-Atlantic region, where I lead for over 75 nonprofits interested in water issues here in Maryland. On behalf of our voters, supporters and many of our partner organizations, I urge you to ensure the financial assurance plans are compliant and outline a complete roadmap to meeting the State mandated requirement to remove 20% of impervious surfaces.

We all want to live in a beautiful neighborhood and in a community with clean and safe drinking water. We want our counties to be places where everyone can enjoy the benefits of clean local rivers and streams. I want to thank the council for not repealing the polluted runoff fee. It went a long way toward this ultimate goal. If built correctly, this Financial Assurance Plan could truly create the win-win success stories around the county that the fee was always intended to. This plan could save the 370 miles of impaired waterways in this county while beautifying the community and creating good middle class jobs. I want to thank the council for their continued commitment toward this goal and working with many of our partner organizations throughout the year. I laud many of the provisions and commitments in this plan.

This plan as it stands is a good start, but Howard County needs to make some key changes to the plan in order to fully comply with the law and ensure enough of the great projects the county needs are put into the ground.

1. Please close the 2.9% gap in the required level of restoration needed by the end of the permit cycle.

Maryland State Law mandates that the county must restore 20% of equivalent impervious surfaces. This plan states that at the end of the total permit tem it will reach 17.1%. The plan finishes a bit late by getting to 21% with projected projects by 2020. Please work to speed up the process to get all the projects needed within the permit time.

2. Do not have remediation be at the expense of conservation.

Forests are the gold standard for water quality, and pollution from the agricultural sector is trending downwards. On the other hand, runoff from parking lots and lawns is one of the most expensive types to deal with. Taking money away from conservation programs and open space programs like the Land Conservation Fund might mean there are more sprawling developments and therefore more impervious

86 Maryland Ave, Annapolis, MD 21401
(410) 280-9855

MARYLAND LEAGUE
OF CONSERVATION VOTERS

surface that you would then have to treat to meet your goal 20%. There should be incentives for conservation to prevent the damage before it happens.

3. Truly commit to having adequate and stable funding.

Use the precautionary principle to make sure you have adequate funding from sources you can count on. This Council worked hard to compromise and work with their commercial citizens to allow flexibility in the program through rebates. However, the fee alone will not cover all of the costs needed. So please make sure you are committing enough from general funds and other sources in a dedicated way that you can assure the public that enough will available to get the job done and the funding will not dry up or be raided if the future does not go as planned.

We will be following these plans closely and look forward to working with you to ensure these plans restore this county's local waterways, improve the community, and comply with the state law. I look forward to helping the county showcase the great work these plans will make possible. I am working on an initiative to collect and showcase the best model projects throughout Maryland to show what these FAPs make possible. I would be very happy to work with each of you. Thank you for your time, and your continued efforts toward improving Howard County.

Sincerely,

Benjamin Alexandro

balexandro@mdlcv.org

CR 92-2016 County Council Hearing on the 2016 National Pollutant Discharge Elimination System MS4 Permit Financial Assurance Plan

Testimony of Alan Schneider, on behalf of the Howard County Group of the Maryland Sierra Club Monday June 20, 2016

The Howard County Group of the Maryland Sierra Club supports approval of the proposed Financial Assurance Plan. The Howard County Sierra Club Group appreciates the County Council's dedication to assuring sufficient funds for compliance with its NPDES MS4 permit. Thank you very much!

The Department of Public Works-Stormwater Mangagement Division is doing an outstanding job as reflected in its 167 page annual National Pollution Discharge Report. Organizations like the Howard County Watershed Stewards Academy, the River Hill Water Team, PATH, Earth Forum, the Coalition for Clean Water and the Alliance for the Chesapeake Bay are creating jobs while restoring the environment, preventing floods and beautifying the community.

However, the Financial Assurance Plan does not provide adequate assurances that Howard County will provide funding to remediate past damage caused by the growth of impervious surfaces, and Howard County is not acting to prevent stormwater damage at no cost. The remediation funding problem is:

1. The 2 year cost is estimated at $40 million. Only half that amount, $10 million, is collected through the Stormwater Protection and Restoration Fee, however through CR37 credits are being considered for reduction of the amount paid by commercial interests. The amount of the reduction is unknown and could be significant.-- Maybe the credits should be offset by pollution penalties.
2. Grant money from the State and Federal Government unknown and is subject to the limited grant funds available, and the special needs of other counties. Also, grant money can also be withheld from Howard County's failures to comply with state codes and guidelines on Planned Service Area expansion. Also, the 7,000 citizens who signed the Referendum Petition have not forgotten.
3. The possibility of $1 million from the Agriculture Land Preservation Program is a relatively small amount and is uncertain.
4. County revenues are declining. There are many competing demands including tens of millions sought by the School Board, and many other interests. How can the infrastructure by updated to accommodate increased density and eliminate school redistricting and temporary trailers.
5. General Obligation Bonds are inadequate because proceeds can be used for competing demands, and do not provide a dedicated fund which is important to small business interests which are part of the restoration efforts.

Mitigation of existing stormwater pollution is painfully expensive. However, it costs nothing to prevent the damage before it happens.

One of the goals of Sierra Club Maryland Chapter is Saving Carroll Creek from irreversible stormwater damage. The damage could not be remediated. The failure, or dereliction of duty, to stop the damage could cost Howard County the loss of all state and federal funding. The proposed project on Route 108, must be stopped. It does not comply with multiple Howard County codes and regulations. Attached for your action are the following:

a. Extensive stormwater damage can be prevented at no cost.
b. Environmental summary and detailed report.

Sierra Club requests your action to prevent the damage before it happens. It costs nothing, and it could save state and federal funding.

Alan Schneider, Vice Chair Sierra Club Howard County Group.

EXPENSIVE STORMWATER DAMAGE CAN BE PREVENTED AT NO COST

1. **Violation of the Board of Appeals Order**. The revised Site Development Plan SDP-14-059 (New Plan) filed in October **violates the Board of Appeals Order in the Conditional Use Case.**
   - In its Ordering paragraph the Board stated that: "The conditional use ***shall*** apply ***only*** to the proposed funeral home and mortuary **as described in the petition and *as depicted* on the Amended Conditional Use Plan dated August 15, 2012…"**
   - **The Site Plan revised October 2015 after the Board issued its Order does not comply.** For example, one Board finding was that 98 parking spaces are required. The Board held that zoning regulations require 98 spaces. Petitioner's testimony was that "the Zoning Regulations require 98 parking spaces for the Funeral Home,…" (Board Opinion p. 12.) On page 27 of the Board's Decision and Order, the Board concludes that the "Funeral Home ... requires 98 parking spaces." There were several other significant changes.
2. **Board of Appeals Was Misled into Approval of Conditional Use.** The Board's Approval of a Conditional Use is invalidated because it was obtained by omission of mandatory information, and by false testimony. The Application and Plan submitted for approval did not contain identification of existing wetlands and springs feeding the Patuxent River and Chesapeake Bay. The Board was misled by false testimony and grossly negligent or intentionally deceptive omissions. Sworn testimony was that there were "no wetlands". Omissions and false testimony invalidate the Conditional Use Approval since wetlands must be evaluated under Zoning Regulation Section 130.0 C.14.
3. **Failure to consider and apply storm water protections for the Patuxent River & Chesapeake Bay.** Zoning regulations require consideration of the surface percentage that will be transformed from pervious surfaces to impervious. "No more than 30% of the parcel on which the Conditional Use is located will be covered by structures or impervious surface, including roads, parking lots, loading or storage areas, and sidewalks." Section 131.0. C.2.c. Pollution damages our economy.
4. **Noncompliance with the intent of the Zoning Regulations.** "These Zoning Regulations and maps are being enacted for the purpose of preserving and promoting the health, safety and welfare of the community." Section 100.0. The community's health and well being are being disrespected. Community safety is adversely affected by traffic generated by this proposed large commercial business which replaces a single family house on an already congested two lane highway. The surrounding Chinese community aversion to living near a mortuary is disregarded.
5. **No Pretreatment Facility.** The initial Technical Staff Report included an opinion from the Health Department requiring a pretreatment facility. There is no pretreatment facility on the Site Plan.
6. **The Plan does not provide the required Health Regulation 200 foot separation between a septic field and a down gradient well.** Past waivers are unacceptable at this environmentally sensitive site.
7. **Insufficient separation between the septic field and the wells providing drinking water to the proposed mortuary and neighboring church. The risks of water and air contamination** from an embalming facility on well and septic require greater technical review, evaluation and enforcement.
8. **Antidegradation review.** As of January 1, 2015, MDE requires any individual or entity that plans to disturb more than an acre of land to apply for coverage under its General Permit for Stormwater Associated with Construction Activity ("GCP"), promulgated as **part of the National Pollutant Elimination Discharge System ("NPDES").** Beginning site development without applying for and receiving such coverage is a violation of Sections 301 and 402 of the CWA. The Army Corps of Engineers will be included. Before current requirements were enacted, and even without any wetlands on the site, the Army Corps of Engineers held that this tributary of Carroll Creek is US waterways on the adjacent St. Louis Parish property in Clarksville. A 75 foot buffer was required at that time. The October 21, 2015 Site Plan proposes an insufficient 25 foot wetlands buffer.

Environmental damage must be prevented. Mitigation of existing stormwater pollution is painfully expensive.

IT COSTS NOTHING TO PREVENT IRREVERSIBLE STORMWATER DAMAGE

Preface: Omission of determinative environmental protections were discovered by a qualified, independent environmental expert. The undeveloped site contains two undisclosed springs and a freshwater spring system. Omitted from the conditional use plan were critical details regarding perennial springs, streams, forest and palustrine wetlands. This system provides a sustained lifeblood for the last Tier II Catchment in all of the Middle Patuxent River Watershed. This project will destroy this critical, fragile groundwater frameworrk.

The project cannot meet environmental standards protecting our drinking water and Chesapeake Bay.

The independent professional expert reviewed the Site Development Plan (SDP), reviewed the U.S. Department of Agriculture Soil Surveys, and conducted extensive visual observations by traversing the 120 acre drainage area surrounding the proposed Donaldson mortuary site ("Subject Site").

Highlights of his professional opinion are summarized below, and his full report follows these highlights.

EXPONENTIAL ECOLOGICAL DAMAGE:

From the Tier II High Quality Waters Map on the MDE website, the subject site lies within the Carroll's Branch Tier II Catchment, draining into the Middle Patuxent River to the East.

This Tier II Catchment is very rare as it lies within the Little Patuxent Catchment and is considered to be threatened with **no assimilative capacity remaining**. "Assimilative capacity refers to the ability of a body of water to cleanse itself. Its ability to receive waste waters or toxic materials without deleterious effects and without damage to aquatic life or humans who consume the water."

"**No assimilative capacity**" means that the Carroll's Branch is in danger and is already under ecological stress. ***Any*** further degradation, non-responsible development or disruption to any water inputs to this stream, *or its smaller feed spring water sources or tributaries,* intermittent or otherwise, will degrade the stream at an accelerating rate. Once a stream reaches saturation levels, ecological death can occur exponentially.

The ecological stress damage is amplified and magnified much more by the proposed development which will reduce the amount of fresh uncontaminated water, such as water from spring heads which can be seen from the perimeter of the Subject Site. These spring heads were not shown/documented on the Site Plan. Fresh water from spring heads and rain water helps to flush the stream on a sustained basis.

THE SITE PLAN OMITTED IDENTIFICATION OF ONE HIGHLY PROTECTED, CRITICAL SPRING

The amount of impervious surface that would be created, as a percentage of total site area, will smother altogether a spring which is unique to Howard County. **This spring was NOT identified on the site plan submitted to the Board of Appeals for its approval.** In addition to the destruction of this spring, the proposed project will destroy the Type II stream which it feeds. This opinion is based on comparing the Site Plan with the topography of the Subject Site and observations by walking the area. It is clear that there will be a high percentage of mass grading and soil disturbance. This will drastically and irreversibly alter the underground hydrology of this unique freshwater manufacturing system which is invaluable for Maryland's future drinking water. The grading for the Site Plan will tip the scale against a critical, fragile system.

In more detail, the Subject Site is an integral part of the micro catchment of high quality headwater. This headwater comes from localized runoff from surrounding poorly drained soils, and more importantly, that which emerges from surrounding groundwater discharge points. These are the so called "bone marrow" and capillaries, providing the essential lifeblood necessary for a sustained base flow for delicate ecosystems.

Also, the special nature of the Subject Site is confirmed by the U.S. Department of Agriculture. The Soil Conservation Service survey confirms that an important spring is located on the Subject Site, as next described.

The Soil Survey for Howard County was issued in July of 1968. This is the soil survey used today for classification of soil types and designation of certain waterways as intermittent or perennial, etc. During the field reconnaissance and testing done during the survey, geologists and surveyors documented and mapped certain locations that had continuous and/or significant groundwater discharges. These groundwater discharge points or "springs" as noted on the map legends are mapped with a particular symbol, a small circle with a directional arrow. The Subject Site is located on Sheet 23 with Clarksville near its center. The total area contained within this sheet is approximately 9.4 square miles or approximately 6,000 acres.

Within the 6,000 acres on Sheet 23, there are only twenty one (21) of these highly important springs critical to our water supply. Five (5) of the 21 springs are clustered in and around the Subject Site. In this unique cluster of 5 of 21 springs in the 6,000 acres, ONE is on the Subject Site, and the other 4 of the cluster of 5 are in the immediate vicinity of the Subject Site. **The ONE spring is on the Subject Site but was not shown on the Site Development Plan presented to the Board of Appeals. This is at best a dereliction of professional duty.**

One unique feature of this cluster of 5 of 21 within 6,000 acres is that these 5 mapped perennial springs are within only a few hundred feet of each other. To be more precise, they fall within an area less than 20 acres in size. This is significant because they form a very tight pattern compared to all the other locations. Three (3) of these fall within the subject drainage area and on the same side of Clarksville Pike (Route 108) and one (1) of these falls within the subject site. (see Exhibit F1)

The closeness of the springs on this side of Route 108 suggest to me that this immediate area is unique and of special County concern for the future survival and quality of this particular Tier II Catchment.
Other than the 5 springs in the unique cluster in and around the Subject Property, the other 16 of the 21 mapped springs are widely and randomly scattered across the 6,000 acres on sheet 23.

Most, if not all, of these spring locations had a catch basin or collection structure "cistern" associated with them because they exhibited steady perennial flows year round and many were used as drinking water for humans and/or livestock. During my many years in the field I have found this to be true.

SOIL COMPOSITION COMPOUNDS THE ENVIRONMENTAL SENSITIVITY AT THE SUBJECT SITE

The GnB2 soil type is a Glenville silt loam soil which covers almost half of the subject site including the onsite spring mentioned earlier. They typically have a fragipan or clay lens that impedes drainage. This impeded drainage over time created underground pathways that converge and emerge as a spring as in this case. The uppermost portion of the site contains the soil type MgC2 soils. These are Montalto silt loam soils, known for their deep drainage but initial rapid runoff tendencies leading into the GnB2 soils. When this happens the

Glenville soils absorb the runoff down to the fragipan increasing the flow of the spring into its respective stream channel providing additional cleansing and a more steady and controlled dilution over time.

The Conditional Use Site Development Plan indicates the most of the site does not pass septic percolation testing. The soil survey indicates that the lower most portion of the site is within the GnB2 soil type, which means that it is unlikely to pass septic percolation testing.

THE CONDITIONAL USE SITE PLAN FAILED TO IDENTIFY WETLANDS ON THE SUBJECT SITE.

It is clear that wetlands are on the property and should have been marked on the Subject Site Plan submitted to the Board of Appeals for its approval of a conditional use. No wetlands were delineated or shown on the Site Development Plan. Failure to identify wetlands Site Plan, which are shown on the Site Development Plan for the adjacent Lutheran Church to extend go to the Subject Site property line, was unethical, professional misconduct or intentional failure disclose environmental factors required to be evaluated by the Board of Appeals.

Easily seen from the property fenceline was wetland vegetation surrounding a groundwater discharge point or "Spring" approximately 25 feet northward into the Subject Site. Water was flowing from the location of the spring and continuing under the fence line and onto the church site. The spring on the subject site is in fact the same location as that shown on Sheet 23 of the Soil Survey. At this location there is also a 6 inch drain pipe coming underground directly from the spring location and extending under the fence line on a small catch basin piping, and continuing through the wetlands on the Lutheran Church property. This is typical of perennial spring head outfalls. The spring would certainly be substantially disturbed, if not destroyed, by constructing the large drainage swale as proposed in the Subject Site Development Plan.

TIER II STREAM DAMAGE WOULD BE IRREVERSIBLE

During field observations, the qualified, independent professional expert traversed the entire 126 acre watershed including the waterway beginning at the spring on the Subject Property and continuing to its confluence with another waterway. The three springs in the unique cluster of springs in this compact area, the associated large perennial stream channel with a strong base flow, and the soils and drainage way basin surrounding them are the source for the cleanest and purest water in this Tier II waterway, hereafter referred to as "Carroll's Run", a tributary of Carroll's Branch.

SPECIAL SOILS AT THIS LOCATION ARE THE FOUNDATION FOR THE TIER II STREAM

These GnB2 soils catch percolating rain water and divert it laterally, instead of straight downward into much deeper aquifers. After this lateral movement it emerges at springheads as cooler and cleaner filtered water which flows directly into the Tier II stream at this location. The lower temperatures sustain aquatic life in Tier II waters. Cooler temperatures are critical for Tier II streams in order to support aquatic life and the diversity of aquatic life. This fragile sustainability brings Tier II steams much needed additional recognition and protection. A small temperature change in the Tier II stream will irreversibly destroy aquatic life. Such damage affects everything downstream.

DESTRUCTION OF THE SPRING BY CONSTRUCTION OF THE PROPOSED SWALE

The spring on the Subject Site would be destroyed by construction of the swale proposed in the Site Plan presented to the Board of Appeals. That Plan shows a swale to be constructed at the location of the spring,

which would irreparably damage the natural spring water flow feeding the threatened Tier II stream. This damage would continue downstream and the degradation would be complete.

DAMAGE FROM DIVERSION OF WATER FROM PERVIOUS TO IMPERVIOUS STRUCTURES

Testimony by the proponent's witness was that the Site contained NO impervious surface. Transforming pervious to impervious on this Site would irreparably damage Carroll Creek by diverting all of the filtered water from natural vegetation and filtering soils onto impervious surfaces. No Stormwater Management best practices can prevent the resulting stormwater damage. No best practices can protect the aquatic life and spawning grounds. Small and large fish, tadpoles and benthic life forms are visible in the Tier II stream.

FORMALDEHYDE TANK LOCATION IS ENVIRONMENTALLY UNACCEPTABLE

The formaldehyde tank is at the worst possible location. It is shown to be near the top of the GnB2 soils. Although the tank is proposed to have protective features, if a leak occurs, and leaking underground storage tanks are one of Maryland's biggest problems, formaldehyde and other chemicals are able to percolate down to the fragipan and flow laterally towards the spring head. Or, if the spring is destroyed as a result of mass grading and flow diversion into the proposed man-made swale, then the formaldehyde and other chemicals could have catastrophic results to this Carroll's Run Tier II stream, as well as the 160+ area wells.

The Conditional Use Site Development Plan shows enlargement of the existing septic field which upgradient less than 200 feet from the well on the Site and the neighboring Church well. This septic field was only for a single family residence. The sewage from a 17,000 square foot commercial building would be immeasureably greater. The Health Department comment in the initial Technical Staff Report stated that a pretreatment facility was not an option. There is no pretreatment facility on the proposed Site Plan. The risk is that septic waste water would go to a less permeable layer towards nearby wells or the spring water. The result would be an increase in toxins in a protected waterway, or in water used for drinking.

MISSING ON THE SUBMITTED CONDITIONAL USE SITE PLAN IS THE EXTENT OF EXISTING FOREST COVER

On the Subject Site Development Plan Forest Cover is only shown within the stream buffer. However, a forest canopy exists well beyond the stream buffer, which can be seen from all sides. Except for the immediate area where the single family residential house was removed, the entire Subject Site appeared to be completely wooded with a mix of native hardwoods, evergreens and scattered ornamental species. The definition of forest used in the preparation of the Site Plan map appears to omit the extent of the existing forest cover, as well as existing specimen trees observed near the perimeter. It appears that areas not designated as forest in the Conditional Use Site Plan do indeed meet the definition of forest as defined by the Maryland Forest Conservation Manual.

THE EXISTING FOREST ON THE SITE MUST BE PROTECTED

Forest Conservation signs are on both adjacent properties north and south of the Subject Site. Forest Conservation provides an additional buffer. Protecting the existing forest on the Subject Site, which appears to be substantially forested, provides additional protection for filtering clean water to the Tier II stream. To the east of the Subject Property is the Preserve at Clarksville. The Preserve at Clarksville is on the opposite side of Carroll's Run. Between the Subject Site and the Preserve at Clarksville is farmland. Although this land is designated for forest preservation there are no trees there at this time. Even if in the future it becomes forested, it would not protect the springs and the water system on Subject Site side of Carroll's Run.

Reforestation will never have the kidney type function that the elevated ground water spring systems have at the Subject Site. Future successful reforestation will slow down storm water runoff, reduce stream channel erosion and provide better wildlife habitat, but it will not provide the internal underground filtering and cooling capabilities of spring systems emerging on the Subject Site side of the Tier II stream.

HIGHWAY DRAINAGE

The Site Development Plan reflects highway expansion adding additional traffic lanes. The highway expansion could cause additional drainage problems. Drainage from highway expansion should be taken into consideration at this environmentally sensitive and protected, unique site.

SUMMARY OF HIGHLIGHTS

1. The Subject Site drains directly into a Tier II stream having ***no remaining assimilative capacity.***
2. The 1968 Soil Conservation Service survey documents an important spring on the Subject Site.
3. The Environmental Consultant observed this spring and wetlands on multiple occasions from the perimeter of the Subject Site.
4. This spring and wetlands were not shown on the Conditional Use Site Development Plan.
5. This spring is one of a unique cluster of springs which feed the protected Type II stream.
6. The Subject Site contains Wetlands which were not identified on the Conditional Use Site Plan.
7. The proposed swale would damage or destroy the spring well head, the wetlands and the Tier II stream.
8. The Conditional Use Site Plan disclosed a formaldehyde tank on this environmentally sensitive site.
9. The site plan does not appear to accurately describe the extent of the protected tree cover.

The undisclosed information described by the professional, independent environmental expert is more than enough to require dismissal of the Proposed Conditional Use.

The above is a summary prepared by Alan Schneider. Please see the following in-depth detail of the independent environmental consultant's analysis by:

Ronald B. Wildman, R.E.M.
FORENVICON, Forensic Environmental Consultants
7417 Hawkins Drive
Hanover, MD 21076
410-869-9999 Office 443-324-2242 Cell
rwildman@forenvicon.com

IN-DEPTH DETAILED ANALYSIS
By
RONALD B. WILDMAN, R.E.M.

Our professional opinion after review of the Donaldson Funeral Home Site Development Plan (SDP), review of the U.S. Department of Agriculture Soil Surveys and from visual observations traversing the 120 acre drainage area surrounding the "Subject Site", is that this project is geographically misplaced, conceptually and functionally flawed, and irresponsibly designed by material omissions of critical sensitive environmental features and resources on the SDP. The proposed development cannot meet environmental safeguards protecting our purest waterways as intended by Federal, State and local regulations. By way of multiple omissions, Planning and Zoning was not provided necessary vital information for its technical review. There was more than adequate opportunity to do so

Material environmental resources omitted on the SDP were very obvious in the field, even as viewed from offsite from the perimeter to the untrained eye. These include perennial springs, streams, forest and adjoining palustrine wetlands. If an environmental consultant was retained to investigate this property they would have recognized them immediately and should have delineated them for mapping on the SDP. In the absence of intentions, their omission would certainly contribute to avoidance of proper environmental compliance. Their absence on the SDP further obscures the devastating and irreversible impacts this project will have, not only to the immediate vicinity, but to one of the most precious, rare and endangered water resource still flowing and struggling to survive in Howard County, namely Carroll's Branch 1, a Maryland High Quality Tier II Catchment.

This development nor any other development with a non-conforming and/or a use density creating a disturbance greater than that which would be allowed under the lowest residential density permissible should not be allowed to proceed within this Tier II Catchment. The inevitable consequence will be material, irreversible damage to our unique and limited water supply. The sensitive location and design of this project will destroy the fragile groundwater framework for the freshwater spring system that provides sustained lifeblood for the last Tier II Catchment in all of the Middle Patuxent River Watershed.

Material environmental resources omitted on the SDP were very obvious in the field, even as viewed from offsite from the perimeter to the untrained eye. These include perennial springs, streams, forest and adjoining palustrine wetlands. If an environmental consultant was retained to investigate this property they would have recognized them immediately and should have delineated them. In the absence of intentions, their omissios certainly contribute to avoidance of proper environmental compliance. Their absence on the SDP further obscures the devastating and irreversible impacts this project will have, not only to the immediate vicinity, but to one of the most precious, rare and endangered water resource still flowing and struggling to survive in Howard County, Carroll's Branch 1, a Maryland High Quality Tier II Catchment. In the absence of intention, the most blatant material omissions include perennial springs, streams and adjoining wetlands which certainly contribute to avoidance of proper environmental compliance.

If this development or any other development more dense than the lowest residential density allowable proceeds, the inevitable consequences

The sensitive location and design of this project will deploy irreversible consequenses destroy the fragile groundwater framework for the freshwater spring system that provides sustained lifeblood for the last Tier II Catchment in all of the Middle Patuxent River Watershed.

At the June 4 meeting, an overview of plans and correspondence documents with discussions was performed in order to get a preliminary understanding of the project proposals, environmental impacts and current review status. In addition to the site plans and an introduction to the subject property, we were presented with a set of plans for the adjoining Christ Lutheran Church site immediately to the South. The relevance of these plans will be made apparent during the following discussions.

The Subject Site encompasses 3.19 acres and is centrally located within a 126 acre drainage area or watershed. Maryland Department of the Environment (MDE) uses the term "catchment" to define individual drainage areas and/or watersheds as we commonly have come to know them as. This will be an appropriate term throughout this discussion as it pertains to the "catching" of rainwater, its behavior or treatment within the respective soil types and its subsequent disbursement into our waterways. There are catchments within larger and larger catchments all the way to the oceans.

The catchment containing the Subject Site is drained by an unnamed tributary. For our purposes we will, hereafter, refer to this tributary as **Carroll's Run 1**. Carroll's Run 1 belongs to a very special and broader catchment called Carroll's Branch 1 which is officially classified and mapped by MDE as being Maryland High Quality (Tier II) Waters. Carroll's Branch 1 includes all of the upper and westernmost headwater stream segments of Carroll's Branch which intercepts many smaller catchments as it courses eastward, passing under MD Route 108, Guilford Road and MD Route 32 for approximately three (3) miles to a point of confluence with the Middle Patuxent River. The Middle Patuxent River then empties into the Little Patuxent River in the vicinity of Savage, just north of Laurel, MD.

Please refer to **Exhibit F-1A**, a block of an aerial view of the High Quality (Tier II) Waters in Maryland Map. This Map is currently on the MDE website, showing the location of the Subject Site and its relation to Maryland, Howard County and other Tier II streams in the immediate area. Again, for purposes of discussion throughout the remainder of discussion, this unnamed tributary associated with the Subject Site will be called Carroll's Run, a tributary within the headwaters of the Maryland's High Quality Waters, Carroll's Branch 1 Tier II Catchment. **Exhibit F-1B**, entitled High Quality (Tier II) Waters in Howard County, dated July 2011, is an earlier stream quality assessment of the same relative areas.

It is important to note that in 2011, according to this Map, the Carroll's Branch 1 Catchment still had some self-cleansing or assimilative capacity still available. Unfortunately and alarmingly, from that time until now, in just four (4) years, this Catchment has been degraded to its current designation as a non-assimilative stream segment joining the only two Tier II catchments within in the adjoining Tier II Patuxent River Catchment that have no assimilative capacity remaining. Interestingly, the last remnant and also endangered (non-assimilative capacity) Tier II waters in the Middle Patuxent watershed adjoin the first two and only Tier II endangered (non-assimilative capacity) catchments within the Patuxent River watershed. Hopefully this isn't the passing of the torch in that regard.

The Middle Patuxent River catchment encompasses approximately 37,000 acres and is the only watershed/catchment with its entire boundary within Howard County and, subsequently, the largest contiguous drainage area within the County. It stretches from the western edges of Ellicott City, westward to MD Route 97 at Cooksville, northward to I-70 and southward towards Glenelg, past Clarksville eastward to northern Laurel. This includes all of Columbia. Another significant importance of this is that out of the total of 37,000 acres, the Carroll's Branch 1 catchment is only about 1,600 acres or 4 percent of the total Middle Patuxent River drainage basin. Yet, Carroll's Branch 1 is the only Tier II level, High Quality Water catchment remaining anywhere in this basin and an endangered one at that.

The next largest drainage area in the County is part of the larger Patuxent River watershed which is shared between Howard and Montgomery Counties. The Patuxent River is the boundary between Howard and Montgomery Counties. It comprises all that land within Howard County to the west and south of the Middle Patuxent watershed and extending into Montgomery County. This watershed supplies the Triadelphia Reservoir to the West and the Rocky Gorge Reservoir to the East.

All of the streams within the Patuxent River watershed are mapped as High Quality (Tier II) Waters and have assimilation capacity available throughout except for two small catchments, each less than 1,000 acres in size. These two adjoining catchments within the huge Patuxent River Catchment are shown as pinkish inclusions south of Clarksville near Highland. That means that they are Tier II catchments but have no assimilation capacity available. In other words, they are both endangered as Tier II catchments. Coincidentally and immediately adjacent to the north of these two catchments, lies the Subject Site within the Carroll's Branch 1 Catchment. It too is pinkish in color which means that it also has no assimilative capacity available. They are together due to the intensifying development within them.

Whereas, these two smaller non assimilative catchments are but small inclusions within the vastly larger Patuxent River Catchment of over 75,000 acres, the Carroll's Branch 1 catchment , a segment of Carroll's Branch, is the one and only Tier II stream segment left in the entire 37,000 acre Middle Patuxent River catchment basin. Not only that, it has no assimilative capacity left rendering it highly endangered. You could say it is the last of its bloodline to the Middle Patuxent River.

Tier II streams are classified as Maryland's Highest Quality Waters and under regulatory anti-degradation protection. Tier II streams are determined and "identified according to fish and benthic indices of biotic integrity." In short, these waterways are currently the healthiest and have the most diversified aquatic life starting with fish right down to what lives under the rocks or the "benthic life." This includes the microscopic organisms as well.

When looking at the Tier II High Quality Waters Map on the MDE website, the Subject Site lies within the Carroll's Branch 1 Tier II Catchment, draining into the Middle Patuxent River to the East. Carroll's Branch is made of multiple segments. None of Carroll's Branch segments to the east are considered as Tier II quality and have lost their ability to adequately cleanse themselves. This Tier II Catchment is very rare within the Carroll's Branch watershed and subsequent Middle Patuxent River watershed. It is considered to be threatened with **no assimilative capacity remaining**.

"Assimilative capacity refers to the ability of a body of water to cleanse itself. Its ability to receive waste waters or toxic materials without deleterious effects and without damage to aquatic life or humans who consume the water." Please refer to **Exhibit F-2**, an e-mail from Ms. Angel Valdez from the MDE Science Services Administration, describing Tier II Standards.

No assimilative capacity means that the Carroll's Branch is in danger and under ecological stress already. Any further degradation, non-responsible development or disruption to any contaminant inputs into any Tier II stream segment or its smaller feeder tributaries or spring sources as discharged into this catchment by the Subject Site or into surrounding areas will degrade the stream even further at an accelerating rate until it won't show up on Maryland's High Quality Waters Map at all. Once a stream reaches saturation levels of any harmful toxic agent, ecological death or toxic saturation can occur exponentially. In addition, if development reduces the amount of fresh uncontaminated water that helps to flush the stream on a sustained basis, as from spring heads, ecological stress is amplified that much more. Successful reproduction of some vital life forms could cease to exist all together.
This level of quality becomes very apparent and more important for protection as we look closer at the positioning of the Subject Site within its respective micro catchment combined with the integral part that it now plays into the contribution of high quality headwater. This headwater comes not only from localized runoff from surrounding poorly drained soils but, more importantly, that rainfall which does percolate down to a fragipan and then emerges from surrounding groundwater discharge points. These are the so called "bone marrow" and capillaries, providing the essential lifeblood necessary for a sustained base flow for these delicate nursery like ecosystems.

The U.S. Department of Agriculture, Soil Conservation Service published the Soil Survey for Howard County issued in July of 1968. This was the soil survey used up until a year ago for classification of soil types and designation of certain waterways as intermittent or perennial, etc. During the field reconnaissance and testing done by geologists during the survey, geologists and surveyors documented and mapped certain locations that had continuous and/or significant groundwater discharges. These groundwater discharge points or "springs" as noted on the map legends are mapped with a particular symbol, a small circle with a directional arrow. The Subject Site is located on Sheet 23 with Clarksville near its center. The total area contained within this sheet is approximately 9.4 square miles or approximately 6,000 acres. Please refer to **Exhibit F-3**, a 24 inch x 36 inch enlargement of Sheet 23.

Within the 9.5 square mile or approximately 6,000 acres contained within Sheet 23, only 21 (twenty one) of these locations were given this special designation as a "domesticated" spring. Most, if not all, of these locations had a catch basin, or collection structure or "cistern" associated with them because they exhibited steady perennial flows year round and many were used as drinking water for humans, irrigation and/or livestock. During my many years in the field I have found this to be true. Of the 21 mapped springs, 16 (sixteen) are widely and randomly scattered across the entire sheet.

However, surrounding the immediate vicinity of the Subject Site are 5 (five) of these mapped perennial springs within only a few hundred feet of each other. To be more precise, they fall within an area less than 20 acres in size. This is significant because they form a very tight pattern compared to all the other locations suggesting higher density groundwater discharge points. Please refer to **Exhibit F-4**, a smaller portion of Exhibit F-3.

Three (3) of these fall within the Carroll's Run catchment and on the same side of Clarksville Pike (Route 108) and one (1) of these 3 falls within the Subject Site.

It is no accident that these 5 clustered springs and many others not mapped coincidentally lie within the aforesaid Carroll's Branch 1 Catchment, decades before there were any surveys performed that determined that this would end up as a special Tier II waterway. These springs are crucial for High Quality Waters maintenance and help form the lifeblood of this Tier II stream segment. Special note should be taken concerning the perennial stream shown along the western limits of the Subject Site (see Photos 4-9). This is not the actual unnamed tributary the drains the 126 acre drainage area or micro-catchment described earlier as first believed. This substantial, deep and well defined perennial stream channel had substantial base flow during all field observations as viewed from the westernmost limits of the Subject Site. It is shown as beginning near the northwest corner of the Subject Site plans. Small fish fry and insect larvae were abundant within its banks and pools.

This location is a very significant groundwater discharge point or spring and is much larger than any other springs previously mapped on the Soil Survey or observed elsewhere during my investigation.
This channel parallels the even larger and stronger flowing "Carroll's Run", a few yards further to the west which is the main channel draining the entire 126 acre drainage area or micro-catchment. It is highly unusual to see a spring of this magnitude and base flow emerging out of the ground with such a force that it has created such an incised and calculating stream channel with both high (bank full elevations) and low water flow markings. It has riffles, bars and pools which is exceptional.

Translated, this all means that the two streams that originate from springs within the Subject Site, which includes the spring/stream (Spring/Stream 1) previously not delineated near the southern central property line and the much larger unnamed Spring/Stream shown on the plan that originates at the northwest corner of the property, coursing southward to a confluence with Carroll's Run, are already on the endangered stream (Tier II) list. By the standards set by the State of Maryland for Tier II Waters, these groundwater discharge sources are the only constant defense this Catchment has to help it receive and process any additional assessment criteria contaminates on its own . Unless protections are afforded to these waterways now, they will likely cease to be Tier II Quality Waters all together which finishes off the last remaining remnant Tier II in the Middle Patuxent River watershed to extinction.

The significant point of the focus on all of these springs, mapped or unmapped, is that the soils surrounding them are the breeding grounds or kidneys for some of the cleanest and purest water that supplies these or any Tier II Waters. Their significant alteration will only have a negative and deleterious effects on any and all waters on or in the vicinity of the Subject Site.

To our knowledge no wetland permit applications were filed nor were any wetlands, beyond the existing onsite stream, delineated or shown on the Site Development Plan for the proposed funeral home. Please refer to **Exhibit F-5**. While looking at the Church site plans we noted that a prior delineated wetland incorporating a stream was shown on the adjoining Church site plans to the south that ended abruptly at the southern property line (fenceline) of the Subject Site. That would be accurate for the Church site as there is no design requirement to extend the wetland delineation beyond the point of the boundary line or fenceline adjoining the Subject Site.

This raised an immediate inquiry as to why a 25 foot wetland buffer to that wetland was not shown on the Subject Site plans, which then prompted a second question as to whether the wetlands from the Church site continue and extend northward, past the property line, and into the Subject Site. Even if the wetlands stopped at the property line, it is likely that, a wetland permit application may be warranted and should be prepared for the 25 foot buffer that would eventually be disturbed by the construction of the large proposed drainage swale and bio-retention facility between the proposed parking lot and northern property line of the Church site. If the wetlands do extend northward into the subject property, a permit may also be required, unless waived, especially in a Tier II waterway.

On June 6, June 13 and again June 23, I visited the Church property and viewed the area in question and other areas from the perimeter fence lines. I observed hydrophytic herbaceous wetland vegetation surrounding a groundwater discharge point or "spring" approximately 20 to 25 feet northward into the Subject Site from the termination of the wetland delineation as shown on the Church plans. Water was flowing during all three visits from the location of the spring and continuing under the fenceline and onto the Church site (see Photos 1-3, 11-22). I confirmed that the spring on the Subject Site is in fact the same location as that shown on Sheet 23 of the Soil Survey. In addition, there was evidence of 1.5 inch black PVC piping extending out of the ground, another ribbed black hose and a 6 inch drain pipe extending under the fenceline and into a small ceramic catch basin from many years ago. As previously mentioned, aside from the black plastic lines, this is a typical observation at these mapped perennial spring head outfalls. Next question, who performed the wetland investigation for this site?

During these field observations, I traversed the entire 126 acre watershed including the waterway beginning at the spring and continuing to its confluence with another waterway which happened to be coming from the second of three mapped spring/streams on the west side of MD Route 108, this one is located on the property adjacent and to the south of the Church site. This was a larger perennial stream channel with a strong base flow. When I reached the spring head itself there was a much larger cistern structure still present, again typical for these primal and map symbolized perennial springs. Further south along Route 108, I found the third of three springs shown on the map and it too was flowing into a stream channel. Spring/Spring 1 and 2 converge into one channel eventually and empty directly into Carroll's Run tributary along the western limits of said properties south of the Church site.

The significant point of the focus on these spring/streams is that the soils surrounding them are the breeding grounds for some of the cleanest and purest water that supplies the Tier II waterway within this drainageway, now known as "Carroll's Run", a tributary to Carroll's Branch, shown as R1 through R4 on the environmental map prepared by ESA. Inc., dated March 2013. According to the 1968 Soil Survey for Howard County, the Subject Site has GnB2 soils covering half of the Subject Site, up to and including the existing spring head. The remaining eastern portion of the site also drains downward and likely contributes to this process. When delineating wetlands, we use the older maps because they are more accurate and show symbols for these spring/streams. The new mapping does not show spring symbols.

However, the new soil survey indicates differences in soil types and delineations. We strongly disagree with some of these changes due to our experience with these soils in the field. The GnB2 soils were changes to GmB and their delineation moved further down slope and southward offsite. The older descriptions have been found to be very useful and more accurate in terms of where we find wetlands and more especially

spring heads which need the fragipan described in Glenville soils to support them. The current soil description under the spring in question would not indicate the possibility of a spring but the spring is clearly there and active just like all of the other springs in the same GnB2 soils or those soils as mapped and described in the older soil survey as having the potential for springs.

As a result of these discrepancies, we called Howard Soil Conservation District office to inquire about the discrepancies in new soil map changes as they relate to what we find in the field. The gentleman we spoke to agreed that they also feel that there are inaccuracies especially with regard to wet soils, soils with fragipans and especially spring head locations. They referred me to a Mr. Dean Cowherd from the U.S. Department of Agriculture who researches these changes. During my conversation with him, he indicated that there could be errors and fluctuations based on broad changes that were not backed up with field testing by Professional Geologists. He subsequently suggested that I go to the Association of Professional Soil Scientists website. There I would find geologists and experts who are available to make professional opinions about inaccuracies to the amended soil surveys. If they concur with discrepancies and prepare a certified opinion or report, the USDA will make necessary adjustments. This could take a while to get to the maps, but their determinations will hold up as expert testimony in the interim.

This is significant because these kinds of soils catch percolating rain water and divert it laterally, instead of straight downward into much deeper aquifers, where it then emerges at these springheads as cooler and cleaner filtered water. The lower temperatures are more suitable for aquatic life in Tier II waters. Tier II streams need cooler temperatures in warmer months to support the diversity from which they have been afforded so much additional recognition and protection as with Carroll's Branch 1.

The closeness of the springs on this side of Route 108 suggest to me that this immediate area is unique and of special County concern for the future survival and quality of this particular Tier II Catchment. It is our opinion that the excessive percentage of mass grading and disturbance proposed on the Subject Site will drastically alter the underground hydrology of a much needed freshwater manufacturing system and therefore degrade an already endangered, disturbed and fragile system. The amount of impervious and disturbed surface that would be created, as a percentage of total site area, will likely smother this spring altogether, as well as degrade the stream for which it feeds.

We were provided a complete copy of the Donaldson Funeral Home Site Plans. Several observations were noted and a third field visit was performed. These findings are further described below.

The Forest Conservation Worksheet on the Plans shows a forest cover of 2.02 acres. We question this total amount and believe it could be higher. In any event, the Subject Site is over 75 percent wooded.
At a minimum, three fourths of the more than 2 acres of forest cover will be destroyed and removed in preparation for grading the entire site excluding the 0.25 acre septic field area near MD Route 108.

On either side of the proposed building and paved parking lot, there are two very large swales proposed that will house a total of five (5) micro-bioretention facilities. The first swale along the northern side of the site is proposed to be fifty (50) feet in width and contains two large micro-bioretention facilities. The second swale along the southern side of the site is proposed to be thirty (30) feet in width and contain three (3) somewhat smaller micro-bioretention facilities. All five of these facilities are part of a network that will collect all the

impervious runoff from rooftop and parking lot and divert it proportionately to the appropriate facility by one collection devise or another. They look very thoughtful, functional and aesthetically pleasing on the plans with individual planting plans with details, plant lists and schedules. We compliment the Engineer on what appears on paper, at least, to be a good, complex and environmentally sound way of treating impervious runoff prior to discharge into a waterway, but not this one. Species proposed to be planted within these facilities are mostly nonnative exotic hybridized species that could potentially escape into the nearby native forest conservation easements to the West of the Subject Site, but that's another topic of discussion all together.

However, on this location, these micro bioretention facilities are the worst possible scenario for the survival of the onsite spring/streams and pose a serious threat to Carroll's Run, not mention Carroll's Branch. Currently, the rainfall that falls onto this property during normal and some heavier rain events percolates slowly downward through the native soils recharging the groundwater beneath. In this case, the groundwater is shallow as evidenced by the existence of at least the two onsite spring/streams observed during field visits. This water is naturally treated and temperatures stabilized as it collects and works its way to the groundwater discharge points or springs whereby the water can do its job keeping the Carroll's Branch 1 Catchment heathy and maintain its Tier II level of classification.

What these facilities will actually do, based on our understanding and experience, is receive the contaminated and potentially hot runoff (in summer) form the parking lot into a pit filled with highly permeable fill material with a layer of vegetation on top and a perforated pipe in the bottom. The highly permeable fill material allows water to percolate at a much higher rate than the native soils would normally allow. As a result, contaminated runoff at potentially elevated temperatures during warm months or days, will enter these" traps". Two and a half acres of a natural kidney for the Carroll's Branch 1 Catchment has now been successfully amputated forever with potential serious consequences.

Here's how. Upon leaving the parking lot or rooftops, the polluted water becomes partially cleansed or filtered as it works its way along the widened swale. The key word is partially. The water then flows into the appropriate designated trap whereby some additional sediments and pollutants are removed as it then speeds its way straight downward through the sandy pervious mix below, then finding its way into a well perforated pipe which then leads to a nice smooth storm drain piping system. This intricate well designed piping system collects and concentrates all the screened and partially decontaminated runoff flow from all five facilities and directs them into one final destination or outfall. From this outfall, the water spreads out and flows overland outside of a channel. In warmer months, the temperatures will increase again, surface contaminates will be picked up and added to whatever other contaminates the traps didn't retain as the water finds its way into the larger of the two spring/streams along the western boundary. This effectively will nullify any positive contributions from the spring sources.

We failed to mention one other serious drawback to these facilities, especially for a Tier II catchment in a non-assimilative endangered condition. Not all of the water entering the facilities will overflow into the solid storm drain pipes and end up at the overland outfall point. The perforated pipe in the bottom of these facilities will potentially enable the water to filter further downward and into native soils. From here, any remaining contaminates and potential toxins will be free to enter some other groundwater source that may be for drinking well supply or even to another fragipan to another spring/stream.

Bottom line, this design is inappropriate and deleterious for a site within a Tier II catchment anywhere. As an additional important note, I couldn't help but notice the location of the soil boring associated SWM Facility #4. The survey stake for this boring was observed in the field and is shown in photographs. In our opinion, it may have been by design that this boring was placed directly on top of the existing spring/stream that is the topic of much of the discussions presented in this letter. It was not good positioning in terms of preservation of this spring. In fact, the drilling of this boring ruptured the fragipan beneath it for which this spring/stream depends on for survival. In all likelihood, SWM#4 is intended to divert, absorb or in other ways eliminate groundwater from ever discharging from this location again. In short order, the stream and wetlands below will cease to function and/or flow.

In order to construct the swale between the Church and Subject Sites, the existing spring would be destroyed and exposed directly into an open swale, therefore, creating a stream within the swale. That is, if the new impervious area doesn't completely divert all of the water that once supplied the filtering soils beneath to the point that it would dry up anyway. And if that happens, than the stream that exists on the Church would also dry up from lack of water down to where it joins the Spring/Stream 2 stream channel. From there, the degradation would be complete. Spring Stream 1 will no longer function. The stream below Spring 1 will cease to flow and there will be no further need for its forest buffer either.

No number of SWM treatment devises can serve the same function of the natural system that exists. A less dense use of the Subject Site would offer better protection for these aquatic spawning grounds. During my visit, I observed an abundance of juvenile fish species, tadpoles and many benthic life forms.

It is good that the Forest Conservation Easement for the Preserve at Clarksville is there to provide an additional buffer to the opposite side of Carroll's Run. However, there are no trees there at this time as it is currently still open farmland, though native herbaceous hydrophytic plant species are already or beginning to dominate large areas within the Ba and GnB2 soils that underlie this area. Hopefully, there are plans to reforest this site. Even so, it will never provide the kidney type function that the elevated ground water spring systems offer. This easement will slow down storm runoff, reduce stream channel erosion and provide better wildlife habitat in the future, but it will not provide the internal underground filtering and cooling capabilities of the spring systems emerging on the east side of the stream. This particular micro catchment is proposed for 37% eventual forest cover, which is much higher than any surrounding catchment areas.

Not having seen a Wetland or Forest Stand Delineation report, I can only go by the map prepared by Environmental Systems Analysis, Inc. (ESA) of Annapolis Md. Having seen the subject property from all sides, I have some valid questions as to the amount of existing forest cover shown. I saw no provisions for specimen tree protection if there are any. On this Map, forest cover is shown within the stream buffer only on this map, yet a canopy exists well beyond and to the east. Except for the immediate area where the house was removed, the remaining Subject Site appeared to be completely wooded from my observations with a mix of native hardwoods, evergreens and scattered ornamental species with sufficient density that questions the definition of forest used in the preparation of this map.

Judging by the omission and/or discrepancy in the wetland delineation or at least in the mapping, a review of all onsite environmental resource studies may be in order. A 25 foot buffer to the delineated wetland limit on

the Church property should have been accounted for onsite unless waived. If upon further examination, areas not designated as forest do indeed meet the definition of forest as defined by the Maryland Forest Conservation Manual and that of Howard County's, then forest conservation calculations could be in error. We cannot easily make that determination without doing an onsite tree density count for certain. However, we do have the ability to do so from an offsite boundary traverse if so warranted using basic topo maps and specialized forestry distance measuring equipment.

Soil survey results on the lower most portion of the site within the GnB2 soil type indicate they would likely not pass septic percolation testing. The GnB2 soil type is a Glenville silt loam soil which covers almost half of the Subject Site including the onsite spring mentioned earlier. They typically have a fragipan or clay lens that impedes drainage. This impeded drainage over time created underground pathways that converge and emerge as a spring as in this case. The uppermost portion of the site contains the soil type MgC2 soils. These are Montalto silt loam soils, known for their deep drainage but initial rapid runoff tendencies leading into the GnB2 soils. When this happens the Glenville soils absorb the runoff down to the fragipan increasing the flow of the spring into its respective stream channel providing additional cleansing and a more steady and controlled dilution over time.

Forcing sewerage to septic fields at the upper elevation near Route 108 might have no problems at all but then again, with the obvious sporadic soil conditions below, a typical design calculation and the 45 degree arc rule of thumb might be meeting up with some uncertainty or an exception in this case. If percolating waste water doesn't drain effectively within the desired angle of repose, it could land on a less permeable layer and divert towards the spring head, not shown on the plans. This in turn could emerge and increase toxins to an already sensitive or toxin saturated waterway. This could be better determined by closer examination of existing or new soil borings. We leave that to the Engineer.

When looking at the side elevation view of the proposed building, it is apparent that the two level building will have very deep cuts and grading into the native soils for the lower level. The building foundation itself will act a barrier to natural groundwater flow and certainly alter or even destroy flow regimes associated with both spring/streams on the property if not beyond.

As for the formaldehyde tank, it appears to be near the top limits of the GnB2 soils as mapped by the older soil survey. Not only that, it is proposed to be only 15 feet from the existing spring, even less from the wetlands currently surrounding it and directly within the expanded 25 foot wetland buffer. Maybe it is part of the design that if there were a major leak, the spillage would not enter the smaller channel below the spring killing everything in its path but would instead, soak into the ground contaminating water wells and/or possibly, divert into the proposed SWM piping system where it could have direct access to the larger spring/stream that feeds the last Tier II waters for all of the Middle Patuxent River.

It is probably proposed as a properly lined and constructed tank with protective features. But should a leak ever occur chemicals could likely percolate down to the fragipan, if a fragipan still exists, and flow laterally towards the spring head opening unless the spring outlet would no longer be there as a result of mass grading and flow diversion into the proposed man-made swale. Then it would just flow into the SWM facility(s) for disbursement later. In a Tier II stream this will have catastrophic results within Carroll's Run and the Carroll's Branch 1 Catchment. Not to mention nearby wells. Who's to say there may be another fragipan further

below the surface. It is important that the soil boring data be reviewed closely for all borings onsite, particularly for SWM #4.

Concerning the "pervious" paving parking area shown on the plans parallel to the southern swale, this again is a technique that is a very thoughtful contribution and addition to the family of micro-bioretention facilities and spider web of drain lines. Unfortunately, this treatment is fraught with dangers of its own as it pertains to a Tier II waterway. Great for sediments, but other harmful and toxic contaminates will still percolate directly into the substrate soils below and end up in the waterways.

We reviewed comments from SHA concerning road improvements and sight distance analysis.
Road widening doesn't present any more environmental hazard other than additional impervious surface and runoff, which again would increase runoff and SWM. All of which has additional detrimental effects for water quality. If sight distance can be linked to environmental management, we feel that there is an obvious problem. SHA says sight distance falls way short of minimum requirements. To correct this could cause not only the extra excel/decel lanes, but major road modifications well beyond the Subject Site limits. These modifications could include leveling or straightening the entire affected stretch of roadway for hundreds of yards, whichever the case, involving potential property encroachments and again, drainage revisions requiring adjoining landowner cooperation.

It is our understanding that revisions or responses to the sight distance comments are still forthcoming. Not adequately addressing these creates serious visual safety concerns especially, for a large commercial funeral home operation, whereby, most of the patrons and their former friends will most likely be older with varying degrees of decaying eyesight. Funeral Processions would be involving hundreds of vehicles of many makes and models of varying running condition and evasive capabilities.

This concludes our professional opinion on environmental management issues for the Subject Site. There are many areas that we can look deeper into but for now, we feel this covers the highlights.
This project, as designed, is glaringly ill placed and would be more suited for a location outside of the Carroll's Branch 1 Catchment or Carroll's Branch watershed all together. Even though the Plans try to project the appearance of being environmentally conscious, they fall disturbingly short of the intent of the Forest Conservation Act of Maryland and The Clean Water Act. Even more concerning, is lack of recognition for the absolute protection of Carroll's Run, a real Gem to Howard County.

Ronald B. Wildman, R.E.M.
ForEnviCon