Monroe County Soil and Water Conservation District
145 Paul Road, Bldg. 5, Rochester, NY 14624
Phone: (585) 753-7380 • Fax: (585) 753-7374

June 29, 2016

Dave Lindsay P.E.,

This letter is in regards to the site visit made to the stormwater pond located on the corner of Paul Road and White Oak Bend in the Town of Chili. Staff from Monroe County Soil and Water Conservation District and Monroe County visited the pond site on Tuesday June 7th, 2016 to address concerns about whether or not the pond requires dredging. After careful site evaluation, I do not believe that the pond needs to be dredged at this time. Instead, I have listed some suggestions below that may help improve the aesthetics and functionality of the stormwater pond.

Stormwater ponds are large catch basins that are designed to retain sediments and pollutants that enter the surrounding storm sewer network. Therefore, stormwater ponds fill in with sediment over time and need to be dredged periodically. However, it appears that this stormwater pond is still at an adequate depth to properly function as a stormwater management facility and does not need to be dredged. Identifiers that may indicate the pond needs to be dredged include visible sediment bars near the surface of the water, redirected or reduced flow through the pond to the outlet, and/or visible wetland plants growing in the pond away from the banks.

There are a number of other areas that can be improved upon in order to make this stormwater pond more aesthetically appealing. Currently, grassed areas are being mowed up to the edge of the pond. I would suggest that a buffer is created between the edge of the pond and the mowed grass areas. These buffers can be created simply by not mowing closer than 5-10 feet from the edge of the pond and allowing tall grasses and vegetation to grow and fill in. Buffers can also be more complex, landscaped areas. From an aesthetics stand point, a landscaped buffer containing different wildflowers, shrubs, and bushes are more desirable, however, they are also more expensive to install and maintain.

Mowing up to the edge of the pond creates a source of phosphorus via grass clippings that can lead increased aquatic vegetation and algae growth. Also, in this case, mowing up to the edge of the pond has caused slumping of the banks in some locations (see **figure 1**). When the soil from the banks slumps into the pond, it creates another source of nutrients and sediments. Lastly, mowing grass on pond banks creates a desirable habitat for waterfowl. Most waterfowl, especially Canada Geese, tend to nest near ponds that have easy water access, and good visibility of the surrounding banks. Droppings from waterfowl can be very nutrient rich and can be another continual source of pollutants to a pond throughout the spring and summer. Creating a buffer around the pond is a good way to drastically cut down on the incoming phosphorus and other nutrients from these three sources.

During the visit, the pond appeared have dense rooted and free floating aquatic vegetation. The rooted vegetation consisted mainly of Bushy Pondweed and Eurasian Water Milfoil. Both rooted plant species can provide beneficial habitat for fish and macroinvertebrates, but in eutrophic (nutrient loaded) waters these species often become too dense to provide habitat and can even deplete oxygen in the pond when

they die off and begin to decompose. A common method for controlling rooted vegetation in ponds is stocking Triploid Grass Carp. These fish can effectively graze on aquatic vegetation enough that a dramatic reduction can be visible within two or three seasons. *Note that Triploid Grass Carp are stocked by permit only through the NYS Department of Environmental Conservation (NYS DEC). Contact the NYS DEC Fisheries Department at (585) 226-2466 if you wish to obtain a stocking permit*.

The eastern corner of the pond was mostly covered in a type of surface dwelling plant known as duckweed, which typically indicates high levels of phosphorus (see **figure 2**). It is likely that duckweed is only present in that corner of the pond due to a lack of flow. There are no storm sewer inlets in that corner of the pond to provide flow to the pond's outlet. An aerator or fountain in that corner of the pond could help to provide sufficient flow to push the free floating plant out of the pond's outlet. In all of these cases, bottom raking, seining and surface skimming are acceptable and effective practices for immediate aquatic vegetation removal.

Filamentous and planktonic algae are present in most water bodies, and they can be very difficult to control. The forms of algae can coat the surface of a eutrophic pond and in some cases can be toxic. Barley straw has shown to be one of the few effective, nonchemical control methods for algae. The enzymes in the barley straw inhibit the growth of algae through processes that are not well understood. It is most effective to place barley straw around the edges of the pond in early spring before algae have begun to grow. If barley straw is planted too late in the season and algae are already established, then the enzymes in barley straw cannot effectively control the algae growth.

Some other suggestions to consider:

- **Prevent grass from entering storm sewers**- Like mowing up to the edge of the pond, grass clippings entering the pond from storm sewer outfalls can add excess nutrients to the pond. Grass clippings should never be dumped into storm sewer catch basins. If grass clippings or other contaminants are noticed near a catch basin, the area should be cleaned up and the debris should be removed.
- **Clean lined channels and drainage areas**- During the visit, grass clippings were found in a concrete channel that drains directly into the pond (see **figure 3**). These channels should be cleaned after mowing to prevent grass clippings from entering the pond. If possible, I would also suggest stopping mowing up to the edge of the concrete channel.
- **Pick up pet waste**- Pet waste around the pond can also add excess nutrients. Informing homeowners that pet waste can negatively affect the ponds water quality is often a good way to prevent pet owners from leaving the pet waste behind.
- **Clean up garbage in and around pond**- There was garbage present in a few locations around the pond (see **figure 4**). Periodically picking up the garbage from the pond is an easy and effective way to improve the aesthetics of the pond.
- **Use only phosphorus-free fertilizer and plan to fertilize at the right time (or don't use them at all)**- It is now against the law to use fertilizers that contain phosphorus for typical lawn care applications. See attached Phosphorus-Free Lawn Fertilizer flyer to learn how to determine if a fertilizer contains phosphorus. Fertilizers should also only be applied when there is no rain in the forecast for 2-3 days after application. This will allow time for the nutrients to infiltrate and be used up in the lawn. It is most beneficial, however, to completely abstain from using fertilizers. In most cases the soils in this area already have sufficient nutrients, and only watering periodically is needed to maintain full, green lawns.

I would like to reiterate that this stormwater pond is still functioning properly for its intended purpose of retaining sediments and pollutants from the surrounding storm sewer network. Storm sewer outfalls that enter the pond and the outlet that drains the pond all appear to be clear of debris and in good working condition (with the exception of one inlet that has exposed rebar, see **figure 5**). Periodic monitoring and inspection (a minimum of every three years is required) of the storm water facilities will help to make sure the pond remains functioning properly. Implementing some of the suggestions made above will help to improve the ponds water quality and aesthetics as well.

I have attached an inspection checklist that we completed while on the site. If you have any other questions about the site visit or this letter, please contact me at (585) 753-7380 or via email at joshlafountain@monroecounty.gov.

Sincerely,

Josh LaFountain

Josh LaFountain
Soil and Water Resource Technician

Attachments: "Living Next to Stormwater Ponds Informational Brochure
"Phosphorus-Free Lawn Fertilizer" Informational Flyer
Bushy Pond weed management
Eurasian milfoil management
Duckweed management
Stormwater Pond Site Inspection Checklist

Figure 1- One example of an area of slumping pond bank that is likely due to the weight of the mower on the edge of the saturated bank.

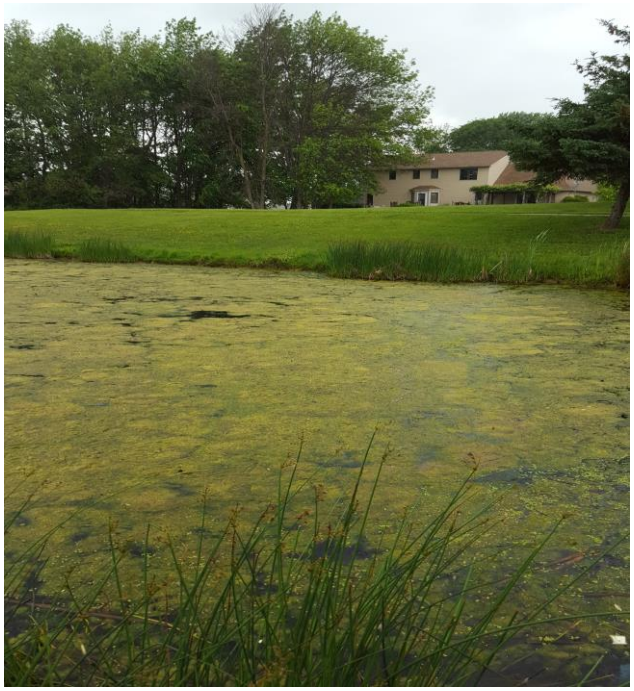

Figure 2- Eastern end of the stormwater pond that has a high duckweed coverage on the surface of the water, which is likely due to the lake of flow in this area.

Figure 3- outfall that is conveying grass clippings into the pond from the lined concrete channel above.

Figure 4-location in the pond where garbage and waste has accumulated.

Figure 5- Rebar is exposed in the southwestern outfall that drains into the pond.