



# Liberty Township Environmental Commission 2022 Annual Report

## **Roster**

Chairman Larry Supp, Vice Chair Doug Hankin, Richard Larsen, Sarah Longo (resigned in September) Doug Wright (liaison to the Land Use Board), Martine Kieffer, Diane Gonski (passed in August), Jarod Gajda, and Secretary Carrie Gajda

Meetings are held the third Thursday of each month, 7 PM at the Municipal Building and/or via Zoom. Membership in the Association of New Jersey Environmental Commissions was maintained.

## **Aquatic Weed Control**

Jason Hall with Northern Lights Lake Rejuvenation was contracted by the Town for weed harvesting of the beach area of the lake. The weeds were cut down to a depth of 5 feet during the week of June 20<sup>th</sup>. The agreement with Solitude Lake Management was approved for assessment and treatment during July and August. Any growth of undesirable aquatic weeds and vegetation found within the designated treatment area with each inspection was treated and controlled through the application of aquatic herbicides and aquatic surfactants. The first herbicide treatment was administered on July 19<sup>th</sup> to approximately 1-2 acres in the beach swimming area. The start date was once again delayed due to late changes to the contract by Solitude. Spare money in LTEC's budget due to the shortened Solitude contract was put toward funding the beach weed harvesting by Northern Lights.

After a recalculation of the Diquat swim exposure scenarios, the LTEC retracted an earlier recommendation to close the beach for a 24-hour period after each application, because the exposure was shown to be within the acceptable risk target.

## **Arbor Day**

Free Trees were given away to residents and the surrounding communities on April 23<sup>rd</sup>. The event was held at the Mountain Lake Pavilion. Event was promoted online and through social media, local blogs, etc. Commissioners gave away all of the 500 tree seedlings, successfully.

## **Native Seed Garden**

The wildflower Peaceful Garden was maintained with weeding and trimming [all season]. A QR code was established for plant identification, which was posted on-site, along with a photo-illustrated sandwich board. Two bird houses were built and installed to promote indigenous birds to the area. The slope/hill portion of the garden, which was not included in the grant funding, was cleaned up and replanted with daffodils.

## **Community Day/Septic Awareness Month**

LTEC used the township's annual Community Day as an opportunity to educate the public on supporting clean water in Liberty Township. The LTEC had two tables with various brochures and giveaways. We had many visitors to our booth, and children had a lot of fun with decorating the wood slice ornaments that Diane purchased. Free shopping tote bags were given, as well as free salad cups that were donated by Jacquie Peterson. Facebook posts were used in promoting septic education during the month of September for Septic Awareness Month. The previously purchased sandwich board signs were used to promote proper septic maintenance, encourage regular pumping, and enhance awareness about how people impact our waters.

**Green Infrastructure/Rain Garden/Pervious Paving Project** – This project, initiated several years ago by the LTEC and with a design rendered by Rutgers University, is a potential candidate for a substantial DEP grant under the "Lakes Bill" enacted last year. It involves installing permeable paving at Pavilion parking lot and boat ramp plus gardens for mitigation of water runoff. The grant deadline was May 28, 2022. The Lake Subcommittee and the MLCA took the lead on lining things up. Dr. Obrupta of Rutgers provided an updated design on the project.

Unfortunately, as you may recall, this grant request was not awarded to the town by the DEP.

**Tree Workshop for 2022** – On April 9, 2022, we held our Tree Talk workshop from 10am to 12pm at the Municipal Building. The workshop consisted of a 30-minute talk by an ISA certified Arborist who works with the Department of Agriculture and National Resources. There was a slideshow presentation followed by a Q & A session. Topics included transplanting, tree care, and identifying disease. The event was a success and yielded a larger than expected turn out with a lot of positive feedback.

**Catch basin Maintenance** – The LTEC reviewed the paperwork for a grant awarded to the town in 2006 which financed the installation of the Vortech System (underground and adjacent to the firehouse) for stormwater collection and discharge to the bog. The LTEC recommended that every effort should be made to maintain the Vortech on a regular basis. It requires periodic inspection and power vacuuming because it removes grit and floating material from stormwater flowing from collection basins in the nearby development before discharging to the bog. The LTEC also recommended that installation of filters to absorb oil should be considered for all the catch basins connected to the Vortech, subject to budget and staffing constraints. Although there are many catch basins in the development, due to limited funds, only 8 were fitted with filtration devices when the system was installed, and that remains the extent of it today.

**ANJEC request to adopt model resolution to protect Municipal Stormwater Rights** – ANJEC urged the LTEC to adopt a resolution relating to potential changes in municipal stormwater rights. ANJEC had reason to believe there is an effort by developers to cut back on local control regarding stormwater regulation. The resolution, which promotes retaining local control, was adopted by the LTEC and passed on to the Land Use Board.

### **Harmful Algae Blooms**

Water testing at the lake yielded very healthy results for most of the season, with June, July, and August showing the lowest number of Blue-Green Algae cells. Levels began to rise in September near the end and after the end of the beach season.

The Mountain Lake Monitoring Program was designed and carried out by LTEC and MLCA-WAG cooperatively, using bi-weekly volunteers. Two LTEC members have also been participating on a Lake Subcommittee to partner with designated members from the Township Committee, Recreation Committee, and the Mt. Lake Community Association to strategize best efforts to increase water quality and reduce HABs at Mountain Lake.

# Liberty Township Environmental Commission

## **2022 Annual Report**

In December of 2021, Princeton Hydro reviewed our 2021 monitoring results and prepared a report. The data shows there is a lot of internal loading in our lake. Internal loading refers to the Phosphorus concentration in the lake water and bottom sediments. Phosphorus is a nutrient and is one of the lake attributes that we monitor at the surface and at depth. Internal loading follows an annual cycle. In the springtime, Phosphorus,

which is a naturally occurring element in plants and animals, is trapped in the lake bottom sediments. However, it will be released if dissolved oxygen levels fall. Ongoing decay processes at the bottom use up oxygen that is dissolved in the water. During spring and summer, the deep water remains cold and does not mix upward. As the oxygen level depletes at depth, the released Phosphorus stays in the water near the bottom, rising in concentration. Then, in fall and winter the lake "turns over" or mixes top to bottom, due to air temperature change which cools the lake at the surface. As a result of this annual mixing event, oxygenated water that was near the surface cools down and sinks toward the bottom. As a result, the deep lake water is displaced and disperses into the upper layer, bringing Phosphorus with it, and making it available as a nutrient for unwanted algae formation. The report noted that although internal loading is a measurable cause of nutrient production and algae growth in our lake, other circumstances may also be present such as geese and leaching septic systems.