Long Island Nitrogen Action Plan (LINAP) - Monthly Newsletter

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Long Island Nitrogen Action Plan (LINAP) - April Newsletter
Long Island Regional Planning Council Update

In this month's issue of the LINAP newsletter, we highlight the ongoing nitrogen reduction-related initiatives led by the Long Island Regional Planning Council (LIRPC).

- The Long Island Water Quality STEAM Challenge
- Hempstead Bay (Western Bays) Water Quality Monitoring
- Newsletter Survey

The Long Island Water Quality STEAM Challenge

The Long Island Water Quality Challenge promotes project-based learning in Science, Technology, Engineering, Arts and Mathematics (STEAM) in Long Island schools. The program helps students in grades 6-12 develop a greater understanding of how their classroom curriculum can be applied to protecting Long Island's crucial water resources – with a specific focus on reducing or eliminating nitrogen pollution. This competition also connects students, teachers and their communities to the overall LINAP initiative.

In its inaugural year, schools serving grades 6, 7 and 8 were invited to develop and design projects for their school grounds which will either reduce the use of fertilizers/pesticides and water consumption, or devise methods to collect and treat stormwater runoff from the school property. A panel of water quality experts – Sue VanPatten, NYSDEC; Corey Humphrey, Suffolk County Soil and Water Conservation District; David Ganim, Nassau County Soil and Water Conservation District; Jackie Grennon Brooks, Hofstra University, Kyle Rabin, LIRPC; and Elizabeth Cole, LIRPC – served as evaluators of the projects. Student proposals were evaluated on originality, technical merit, quality of ideas, and practicality.

The top two winners from the 2020 competition were from Accompsett Middle School and Cutchogue East Elementary School. Each winning school will receive a $5,000 grant to implement their project and mitigate nitrogen impacts on their school property!

At the Accompsett Middle School, students proposed a native plant and pollinator garden for the front entrance of the school. The garden will serve as an ongoing "classroom" for both middle

school and elementary school students on how native plants and natural pollinators, such as birds, bees and bats, can reduce the need for nitrogen fertilizer, pesticides or overwatering.

At Cutchogue East Elementary School, the students collaborated to research stormwater treatments to minimize pollution into the Peconic Bays. They created a design for a bioretention area on the campus which will use soil, plants and microbes to treat stormwater before it is infiltrated or discharged. When implemented it will reduce the nitrogen, among other containments, in the stormwater that enter the Peconic Bays.

The second annual Long Island Water Quality Challenge is well underway with a total of 14 teams participating from Nassau and Suffolk Counties! Winners from the 2021 Long Island Water Quality Challenge will be announced in late May.

For more information, visit LIRPC's Long Island Water Quality Challenge webpage.

Top row left to right: Paul McNeil, Principal Accompsett Middle School, Senator Mario Matterra, John Cameron, Chair of the Long Island Regional Planning Council, Amy Olander, Teacher, Lou Mincieli, Teacher, Dr. Mark Secaur, Superintendent, Smithtown Central Schools, Natalie Wright, Commissioner of Economic Development and Planning, Assemblyman Michael Fitzpatrick. **Bottom row left to right:** STEM Team winners: Maddie Law, Sierra Needham, Holly Doyle, Dylan Smith, Sydnie Vogel, Miley Santiago, Doug Antaky, Ryan Matejka. (Photo Credit: LIRPC)

Water Quality Monitoring in the South Shore Estuary Reserve Western Bays: A Continuation and Expansion of the Town of Hempstead Bay Study

Now in its second year, the Hempstead Bay Water Quality Monitoring Program provides a framework for monitoring, analysis, and reporting of water quality within the surface waters of Hempstead Bay (informally known as the Western Bays) and its major tributaries. The program – a collaboration among the Long Island Regional Planning Council (LIRPC), Hofstra University and the Town of Hempstead Department of Conservation and Waterways (TOH C&W) – continues to expand upon the monitoring work that the TOH C&W conducted for nearly five decades in the South Shore of Nassau County.

The water quality data is being collected from strategic locations in Hempstead Bay which will provide a baseline against which to evaluate changes to nutrient loading. Over the next decade, there will be large-scale ecosystem-based and hard-engineered upgrades in the region (e.g. coastal dune restoration, wastewater treatment plant improvements, etc.). The data collected now will provide a way to show the improvements from these major initiatives, which includes the major upgrades being completed at the South Shore Water Reclamation Facility.

The program also looks at atmospheric nitrogen deposition which is associated with emissions from fossil fuel-related energy production, fertilizer usage, and transportation emissions. This work is critical in order to quantify the nitrogen input to Hempstead Bay and the surrounding watershed and better inform nitrogen reduction targets.

As part of this program, the Hofstra-TOH C&W project team conducted an extensive analysis using all readily available historical water quality data in the region. A major goal of this work was to better understand spatial and temporal trends in water quality over time and their potential drivers. This work has informed the distribution of water quality stations that are currently deployed in the region under the Hempstead Bay Water Quality Program. A report entitled: *Water Quality Trends in Hempstead Bay, NY from 1968 – 2017: A Historical Data Analysis and Report for Long Island's South Shore Estuary Reserve Western Bays* was written to summarize the findings.

Funding for the program was made possible by the NYS Department of Environmental Conservation. Planning for the third year of the program is currently underway.

Cassidy Freudenberg, TOH C&W employee, using the Van Dorn water sampler. (Photo credit: Dr. James Browne)

Newsletter Survey

The Long Island Nitrogen Action Plan (LINAP) is looking for your help! The LINAP Newsletter has been providing updates on all the exciting, important, and ground-breaking projects happening on Long Island since 2017. We are looking for feedback on how well the newsletter meets your needs and to help us advance the newsletter to the next level.

We encourage you to fill out the survey using the link below. It should only take 3 - 5 minutes to complete, and responses will be used to inform our newsletter going forward.

Survey Link