Long Island Nitrogen Action Plan (LINAP) News & Updates

Welcome to the first LINAP Quarterly newsletter!
This newsletter highlights the activities that our LINAP partners are engaged in to reduce nitrogen in Long Island's surface and ground waters.
Newsletters will be sent quarterly with relevant updates on the advances being made throughout the planning and action phases. *In between newsletters, bulletins with additional information about LINAP will also be sent to this mailing list.*

This issue's topics:

What's Next

- Requests for Proposals (RFP) will be issued shortly to hire specialized consultants to advance tasks listed in the LINAP scope and others who will contribute to a comprehensive Action Plan.
- The Long Island Regional Planning Council (LIRPC) and NYSDEC are working together to implement an outreach plan to engage and inform stakeholders and the public throughout the Plan. Meetings, webinars, and e-bulletins will be announced soon.
- NYSDEC's LINAP webpage will be expanded with extensive information on LINAP, including presentations, documents, maps and more.

Nassau County

Bay Park WWTP

- Nassau County is conducting a majorreconstruction and resiliency upgrade (PDF, 6.22 MB) to its Bay Park Wastewater Treatment Plant (WWTP), which was severely damaged by Superstorm Sandy.
- As part of the upgrade effort, a nitrogen removal initiative for the Bay Park WWTP is currently out to bid (*Level I Biological Nutrient Removal Sidestream Centrate treatment*) aimed at reducing nitrogen output to the Western Bays. This project is estimated to cost $18 million and should be constructed by 2018.
- The county has proposed diverting effluent from Bay Park, currently discharged to Reynolds Channel, to the Cedar Creek WWTP ocean outfall through an unused New York City pipe beneath Sunrise Highway. The engineering study for this proposal was approved by the county legislature and will commence in December 2016.
- A county-funded study is examining the feasibility of expanding the Glen Cove WWTP service area (PDF, 328 KB) into the Hempstead Harbor watershed (Crescent Beach, Sea Cliff, Glen Head, Glenwood Landing, Roslyn Harbor/Greenvale, parts of Port Washington).

Suffolk County

- Suffolk County issued a Comprehensive Water Resources Management Plan that lays out key elements of the Reclaim Our Water strategy (ROW). The ROW program will

evaluate and reduce nitrogen loading from up to 360,000 onsite wastewater sources (cesspools and septic systems).

- The County's Subwatersheds Wastewater Plan (SWP) is underway to evaluate parcel-specific nitrogen loads from wastewater, fertilizer, stormwater, and atmospheric deposition to the groundwater and receiving waters of nearly 200 subwatershedsidentified by the Suffolk County Department of Health Services and stakeholders, including the Wastewater Advisory Committee. The effort will develop first order nitrogen load reduction goals for groundwater and surface waters. Work on the SWP began in summer 2016, with the draft SWP expected in summer 2017.
- The County is examining new technologythrough its NYSDEC-funded Septic/Cesspool Upgrade Program Enterprise (SCUPE). Over the last year (Phase I), it monitored six Innovative/Alternative Onsite Wastewater Treatment Systems (I/A OWTS) at 19 residential sites. This September, the first approval was granted for an I/A OWTS technology for provisional use countywide. More Phase I technology approvals are anticipated by the end of the year. The County expects up to 20 more installations of I/A OWTS comprised of eight additional technologies during Phase II of the I/A OWTS demonstration program. Phase II installations are expected to begin in late 2016/early 2017.

Installation of Hydro-Action system in Nesconset - first I/A OWTS to receive provisional use approval

- Article 19 (PDF, 382 KB) of the Suffolk County Sanitary Code was approved in July 2016 by the Suffolk County Board of Health and Legislature. It established the Suffolk County Department of Health Services (SCDHS) as a Responsible Management Entity to manage and oversee the new I/A OWTS. Related residential construction standards, which define the requirements for the design and construction of I/A OWTS, were adopted by the SCDHS in September 2016.

United States Geological Survey (USGS)

- The USGS is developing a new groundwater flowmodel for Long Island as part of its ongoing water-quality assessments of the Nation's principal aquifer systems. One early use of the model is to delineate the groundwater recharge areas (groundwatersheds), travel times, and outflow rates to upwards of 1,000 receiving surface waters. These include all those on the state's Priority Waterbodies List. The groundwatershed delineation is being done in cooperation with the NYSDEC. Once the new

island-wide model is documented, it will be available for future LINAP nitrogen loading studies.

The Center for Clean Water Technology at Stony Brook University (CCWT)

- CCWT is tasked with developing and commercializing more cost-effective water quality protection and restoration solutions. Funded by the NYS Environmental Protection Fund (as administered by NYSDEC) and Bloomberg Philanthropies, the Center's initial focus is delivering affordable, high performance technology that can efficiently remove nitrogen and other contaminants from household wastewater and replace or retrofit existing cesspools and septic systems. The Center is currently piloting a series of Nitrogen Removing Biofilters: passive, non-proprietary systems that have demonstrated an ability to achieve up to 90 percent nitrogen removal, along with efficient removal of contaminants of emerging concern. In addition to this potentially near-term solution, the Center is pursuing additional research and development efforts aimed at improving the nitrogen removal efficiency and cost of constructed wetlands, permeable reactive barriers, and membrane bioreactor technology. An ideal resource for emerging and established businesses in the field of onsite wastewater treatment, the Center is equipped with unique analytical capabilities and subject matter expertise that can help prove and propel a wide range of technologies.

Stony Brook University – School of Marine and Atmospheric Sciences (SoMAS)

- Quantitative estimates of nitrogen loadingrates and sources are needed to prioritize regions most in need of nitrogen remediation. SoMAS is working with NYSDEC, Suffolk County, The Nature Conservancy, and the USGS to develop Nitrogen Load Model (NLM) assessments for hundreds of Suffolk County watersheds. The NLM has been validated by comparing its predictions to empirically measured nitrogen. The NLM uses multiple rates and land use parameters to predict the amount of nitrogen released into a watershed from all major sources, including wastewater, fertilizer, stormwater, and atmospheric deposition, and the fraction that is ultimately delivered to

the estuary. The NLM recognizes that nitrogen on Long Island is transported primarily via groundwater.
- Similar work for Nassau County watersheds will begin soon.

The Peconic Estuary Program (PEP)

- Nitrogen management is an important part of the PEP's water quality strategy in the Peconic Bays. Important steps have been taken to reduce point source discharges, including development of a Total Maximum Daily Load (TMDL), establishment of a No-Discharge Zone and upgrades to the major sewage treatment plants. However, since nonpoint source loading accounts for 70% of the land-based load to the Peconic watershed, in 2013 the PEP made nonpoint source load reduction a top priority in its Action Plan (PDF, 578 KB).
- An update of the PEP *Comprehensive Conservation and Management Plan* is expected in 2018.
- Staff are working closely with Suffolk County on its Sub-Watersheds Plan and with LINAP.

Environmental Protection Agency (EPA)

- EPA is proposing a Nitrogen Reduction Strategyto aggressively continue progress on nitrogen reductions, and achieve water quality standards throughout Long Island Sound and its embayments and near shore coastal waters. This strategy complements and expands the focus of the Long Island Sound Nitrogen Total Maximum Daily Load (TMDL) to include other nutrient-related adverse impacts to water quality, such as loss of eelgrass.

New York State Department of Agriculture and Markets (DAM)

- In 2015, the Suffolk County Soil and Water ConservationDistrict (SWCD) received an Agricultural Nonpoint Source Abatement & Control grant to develop Nutrient Management Plans for 15 Suffolk County farms.
- This year, the State Committee worked with Suffolk County SWCD to evaluate their Agricultural Environmental Management program and enhance services to local agriculture.
- DAM is contracting with Suffolk County Agricultural Stewardship Program partners, Cornell Cooperative Extension and Suffolk County SWCD for nutrient management research, planning, and implementation with $500,000 from the State's Environmental Protection Fund.
- The NYS Soil and Water Conservation Committee funded the Nassau County SWCD to implement programs to manage invasive species, restore native ecology, implement green infrastructure, and reforest Nassau County.

The Long Island South Shore Estuary Reserve (Reserve)

- Nutrients, specifically nitrogen, are a key concern identified in the Long Island South Shore Estuary Reserve Comprehensive Management Plan. The Reserve has provided funding to the following key partner projects that support the LINAP:
    - Suffolk County Department of Health Services Subwatersheds Wastewater Plan – helps meet nitrogen load reduction goals for surface water restoration and protection of groundwater and drinking water.
    - USGS Coordinated Water Resources Monitoring Strategy – helps guide future efforts to improve water quality in the South Shore Estuary Reserve.

Seatuck Environmental Association

- Using the three-dimensional, EPA-supported, Environmental Fluid Dynamics Code (EFDC) model and a detailed gridding scheme, Seatuck has developed a hydrodynamic model of the Great South Bay and the Western Bays. This model, which extends from Rockaway Inlet to Smith Point, is being used to estimate residence times and flushing rates throughout the region.

About the LINAP

LINAP will determine how best to reduce nitrogenloading to groundwater and surface water through technical, management, and regulatory/policy actions. Nitrogen is the leading cause of water quality deterioration in Long Island's estuaries. It comes primarily from wastewater and fertilizer. Effluent from onsite wastewater disposal systems (cesspools and septic systems) reaches groundwater, which ultimately reaches our bays and estuaries. Excess nitrogen causes algal blooms that lead to low oxygen conditions, fish kills, and degraded wetlands and marine habitats. Nitrogen also contaminates the groundwater that becomes our drinking water.

In 2015, New York State appropriated $5 million to develop the LINAP. Long Island's legislative delegation, with support from local environmental organizations, successfully championed funding for LINAP, which will be one of the most significant environmental initiatives since the preservation of the Pine Barrens.

A draft LINAP scope was prepared with stakeholder input and issued in June 2016. Many of the LINAP tasks listed in that scope are underway as part of the Early Action Track (12 to 18 months). The remaining tasks will be completed as part of the Full Term Track (36 to 48 months). LINAP will be developed through a broad partnership, which includes NYSDEC, the LIRPC, Suffolk and Nassau County, local governments, area scientists, numerous environmental organizations, non-governmental organizations and a cadre of consultant services. Also, the LINAP development process recognizes that there are many activities targeting mitigating nitrogen impacts on water quality currently underway. LINAP will not duplicate these ongoing efforts. Rather, it will work in parallel with these efforts with the goal of developing a robust nitrogen loading reduction plan for Long Island.

How is LINAP Managed?

A Project Management Team (PMT), made up of NYSDEC, LIRPC, and both counties, is responsible for administration and management, including: scope, budget, schedule, contract, consultant assessment and oversight, annual work plan, interagency agreements, coordination, outreach, reporting and implementation. The PMT established four Technical Workgroups of local, regional, and national experts to advise the team: Data Collection & Analysis, Technical & Engineering, Fertilizer Management, and Implementation.