

Long Island Nitrogen Action Plan (LINAP)

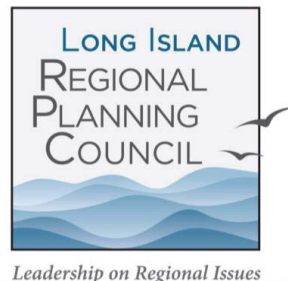
A Broad Plan to Mitigate Nitrogen Impact on Water Quality



LINAP OVERVIEW AND UPDATE
at January 22, 2019 NYS Ocean Acidification Task Force Meeting

Kyle Rabin

Program Manager, Long Island Regional Planning Council

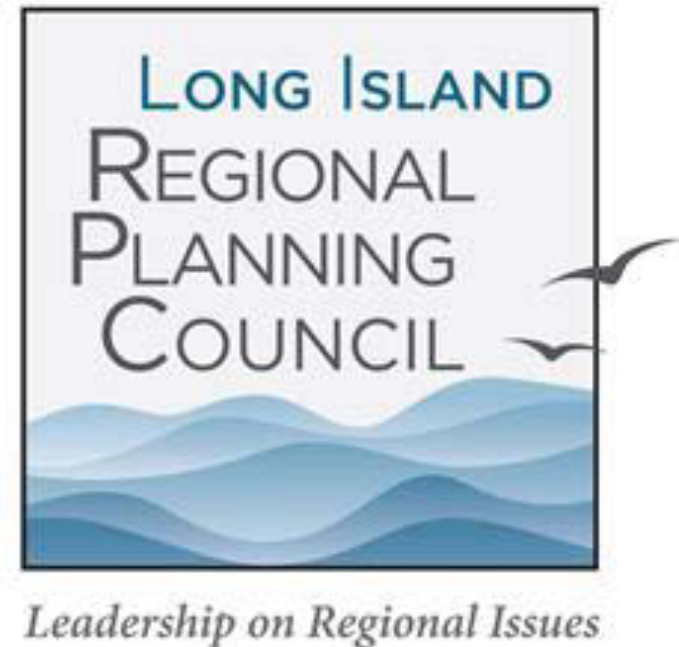


Department of
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Long Island Regional Planning Council

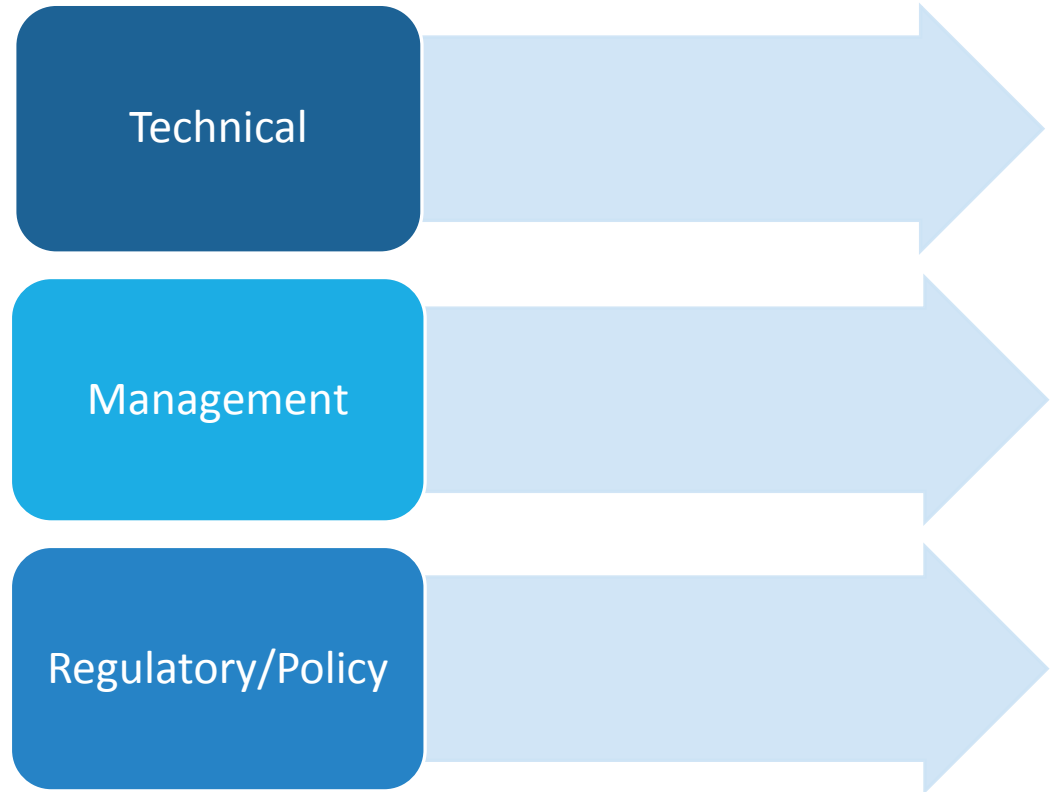
LIRPC's Mission

- ❖ To build productive linkages between communities
- ❖ To provide focus on issues at a broad geographic scale
- ❖ To foster the development of regional comprehensive planning



What is LINAP?

- A multiyear initiative to reduce nitrogen in Long Island's surface waters and groundwater
- Locally-led partnership
 - LIRPC
 - NYSDEC
 - SUFFOLK COUNTY
 - NASSAU COUNTY



FUNDING TO IMPLEMENT LINAP

Clean Water Infrastructure Act Funds and Environmental Protection Fund:

- Water Quality Improvement Project
- Water Infrastructure Improvement Act
- Septic System Replacement Fund

Other Funding Sources:

- NYSDOS Local Waterfront Revitalization
- NYSDOS South Shore Estuary Reserve
- Community Development Block Grants
- Empire State Development Corporation



**Department of
Environmental
Conservation**

LINAP PLANNING STRUCTURE

Project Management Team

- Department of Environmental Conservation
 - Long Island Regional Planning Council
 - Suffolk and Nassau Counties
-
- ❖ Monthly conference calls for updates and coordination

LINAP Workgroups

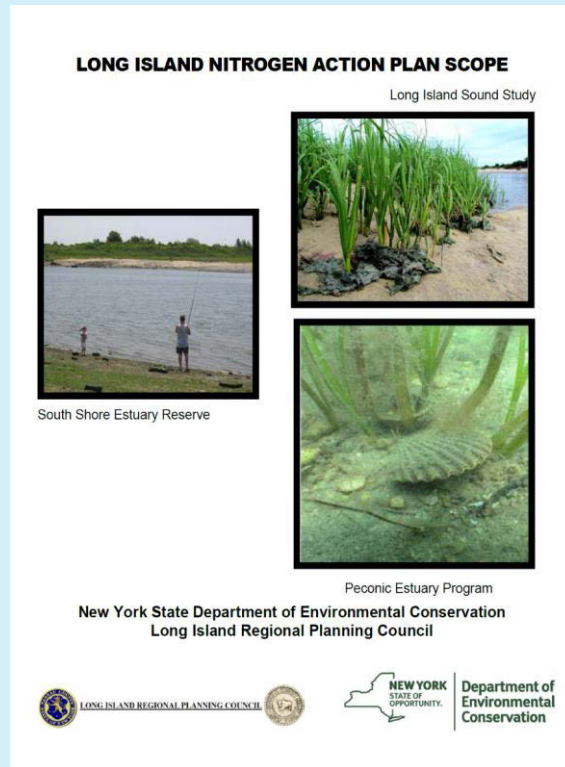
- Environmental organizations and trade groups
- Towns, cities, and villages
- Estuary program and protection committees
- Academics and land use planners
- Engineers and technical experts
- Federal, state, and county agencies

Workgroups include: Fertilizer Management; Water Reuse



LINAP is a Team Effort

LINAP Goals



To assess nitrogen pollution in surface waters and groundwater

To identify sources of nitrogen

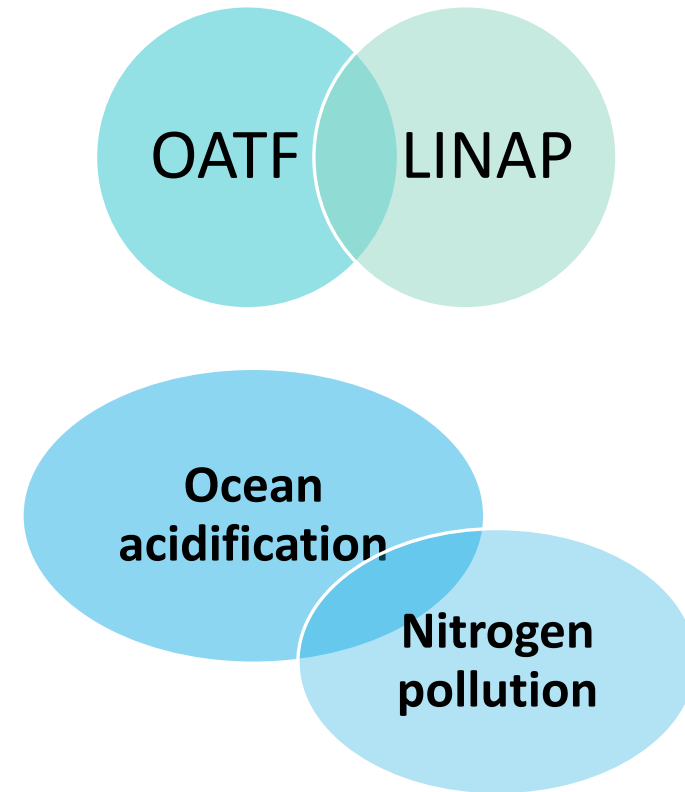
To establish nitrogen reduction endpoints

To develop implementation strategies to achieve reductions

LINAP and the Ocean Acidification Task Force

OATF and LINAP are playing complementary roles

The task force is examining the connection



LINAP and the Ocean Acidification Task Force (*continued*)

Atmospheric carbon dioxide forms carbonic acid when dissolved in water. As a result, the increased levels of carbon dioxide resulting from climate change have contributed to oceans becoming increasingly acidic. Ocean acidification can be further exacerbated by runoff and nutrient influx from land. According to information provided by the Maine Ocean Acidification Commission, "Scientific data indicates that the rate of acidification is at least 100 times faster at present than at any other time in the last 200,000 years and may be unprecedented in earth's history." In addition, it is thought that the Atlantic Ocean along the Northeast shore will be especially vulnerable to ocean acidification because carbon dioxide is increasingly soluble in cold water and the Northeast will be subject to increasingly intense rain events leading to more intensive runoff.

- OATF Briefing Document

SUFFOLK COUNTY

NITROGEN REDUCTION INITIATIVES

Subwatersheds Wastewater Plan

Septic Improvement Program

Septic/Cesspool Upgrade Program Enterprise



SUFFOLK COUNTY

NITROGEN REDUCTION INITIATIVES (CONT'D)

Sanitary Code Changes

Sewering Projects

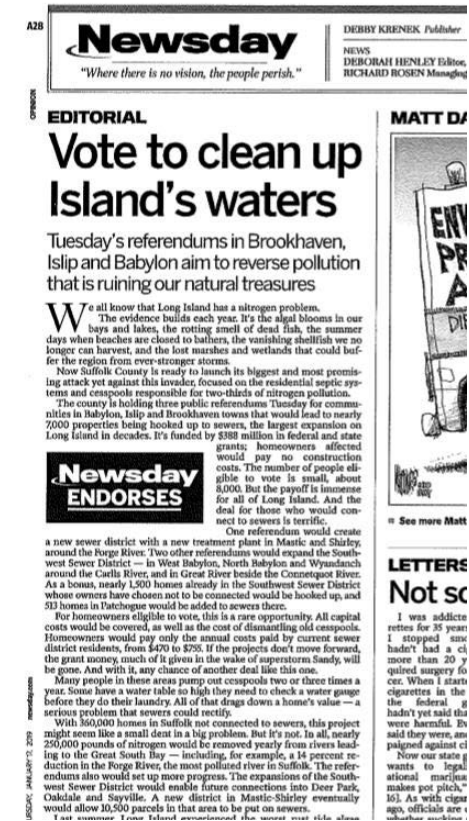
Harmful Algal Bloom Action Plan



SUFFOLK COUNTY SEWERING PROJECTS

SC Coastal Resiliency Initiative

- On November 20, 2018 the SC Legislature approved three referendums for sewer expansion in parts of Babylon, Islip and Brookhaven towns.
- The vote is being held today on these referendums.
- This initiative will eliminate thousands of cesspools and septic systems.
- Approx 250,000 pounds of N will be removed yearly from the rivers that discharge to Great South Bay
- Largest investment in water quality infrastructure in the County in more than 40 years.
- Vote held on three ballot initiatives.



SUFFOLK COUNTY'S HARMFUL ALGAL BLOOM ACTION PLAN

- Suffolk County released its Harmful Algal Bloom Action Plan in 2017
- On May 16, 2018 New York Sea Grant in partnership with Suffolk County hosted the 2018 Suffolk County Harmful Algal Bloom Symposium
- There were confirmed fresh water and marine water HABs in Suffolk in 2018.



A “Summer 2018 Harmful Algae Bloom Map” was released by the LI Clean Water Partnership and Dr. Christopher Gobler (Stony Brook University School of Marine and Atmospheric Sciences)

NASSAU COUNTY

NITROGEN REDUCTION INITIATIVES

Subwatershed Planning

South Shore Water Reclamation Facility (Bay Park WWTP) Upgrades

South Shore Water Reclamation Effluent Diversion Project



NASSAU COUNTY

NITROGEN REDUCTION INITIATIVES (cont'd)

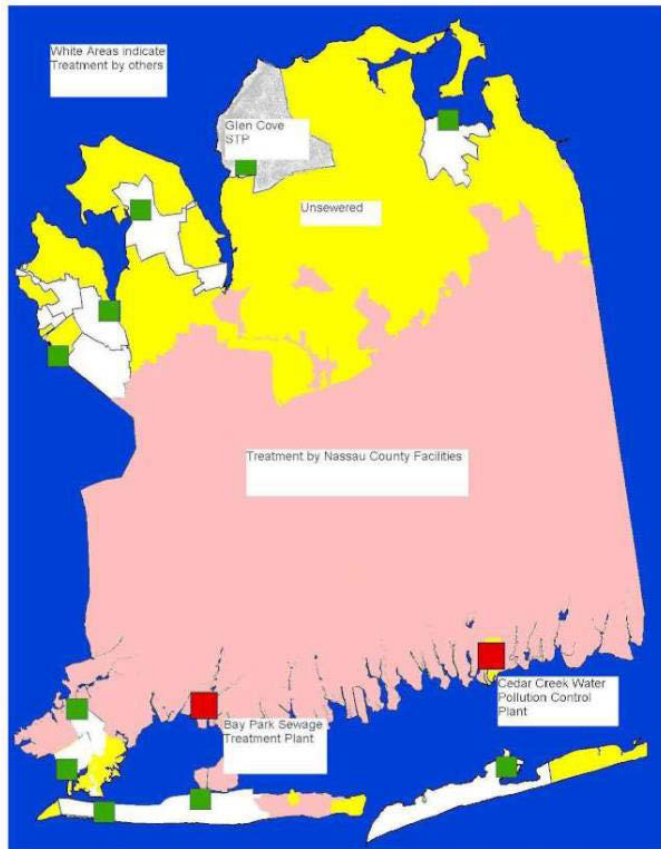
Long Beach Wastewater Diversion to Bay Park

Point Lookout Sewer Study

Septic Improvement Program



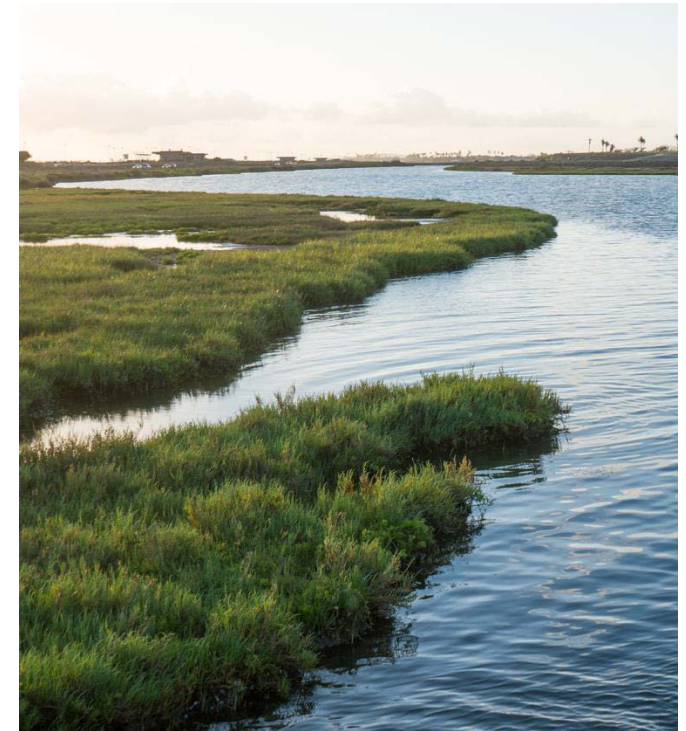
Sewered and unsewered areas of Nassau County



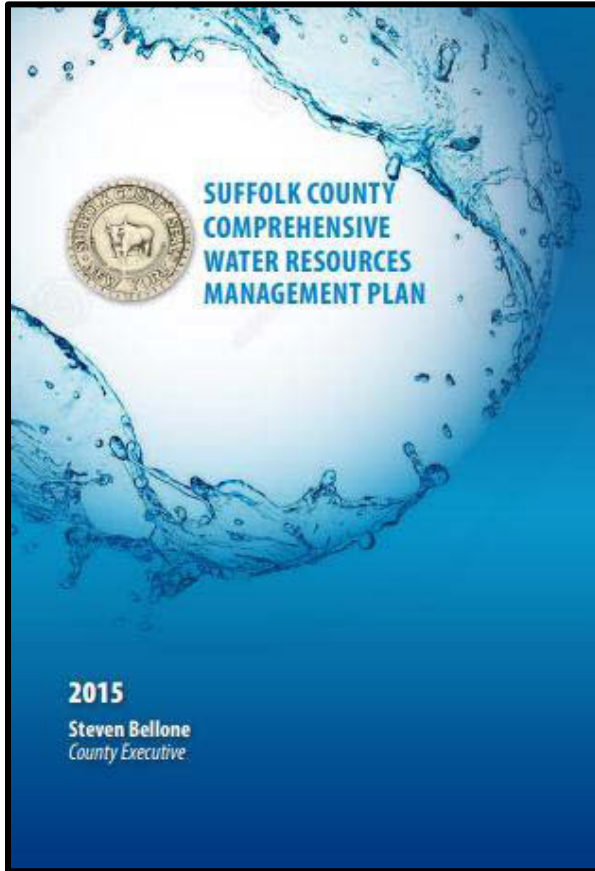
- ❖ 90 percent of the county is sewer
- ❖ On Nassau County's north shore, septic systems and cesspools (approx. 60,000 individual systems) are the biggest contributors in several watersheds – including Hempstead Harbor, Cold Spring Harbor and Mill Neck Bay
- ❖ Nassau's south shore also has septic systems and cesspools in some places, e.g. Point Lookout

Other Initiatives

- ❖ Suffolk County Water Quality Improvement District
- ❖ SSER Western Bays Water Quality Monitoring
- ❖ STEM Challenge
- ❖ Nitrogen Smart Communities
- ❖ Bioextraction Initiative
- ❖ Fertilizer Management Workgroup
- ❖ Water Reuse Workgroup
- ❖ LIQWIDS
- ❖ Outreach



Suffolk County Water Quality Improvement District Study



- ☐ Identify and evaluate the infrastructure required for the District
- ☐ Conduct a financial analysis of potential costs and revenue sources
- ☐ Propose the programmatic functions of the District
- ☐ Propose the management structure of the District including all involved entities, stakeholders
- ☐ Establish a timeline/critical path for all actions at all levels (State, County, Town, etc.)

LINAP Fertilizer Management Workgroup

Objective:

- Reducing the likelihood of over applying fertilizer

Recommendations:

- Limiting the dates fertilizers can be applied;
- Clarifying the min. amount of slowly available nitrogen that should be in lawn fertilizer;
- Clarifying the max. amount of nitrogen that should be applied in an individual application
- Clarifying the max. amount of nitrogen that should be applied annually
- Improving fertilizer product packaging so that it is more easily understood by homeowners and professionals



SSER Western Bays Water Quality Monitoring

Expand water quality monitoring in south shore bays

- Utilize uniform sampling, data collection and analysis
- Identify location and parameter data gaps
- Review historic water quality data for trends
- Conduct relevant research
- Prepare print and electronic reports & public information



STEM CHALLENGE – LI Water Quality Challenge

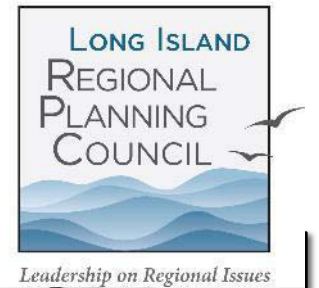
Project-based learning in **S**cience **T**echnology, **E**ngineering and **M**ath

Low Input Landscaping to Reduce Fertilizer Nitrogen Loads

- Identify inputs used today and environmental impacts
- Design new landscape to lower nitrogen use

Green Infrastructure to Reduce Stormwater Nitrogen Loads

- Identify current practices and environmental impacts
- Design measures to improve collection, treatment, recharge



Nutrient Bioextraction Initiative – Seaweed & Shellfish Aquaculture to Remove Nitrogen

Key deliverables include:

- Assessing the siting, cultivation and marketing challenges facing seaweed and shellfish bioextraction and its effectiveness in reducing nitrogen loads in NY and CT surface waters;
- Reviewing and reporting on literature, permits, and policies;
- Providing recommendations to streamline the regulatory process;
- Developing a GIS-based tool to identify potential seaweed and shellfish aquaculture sites for bioextraction;
- Creating an interconnected workgroup of professionals and stakeholders that will work towards advancing bioextraction.



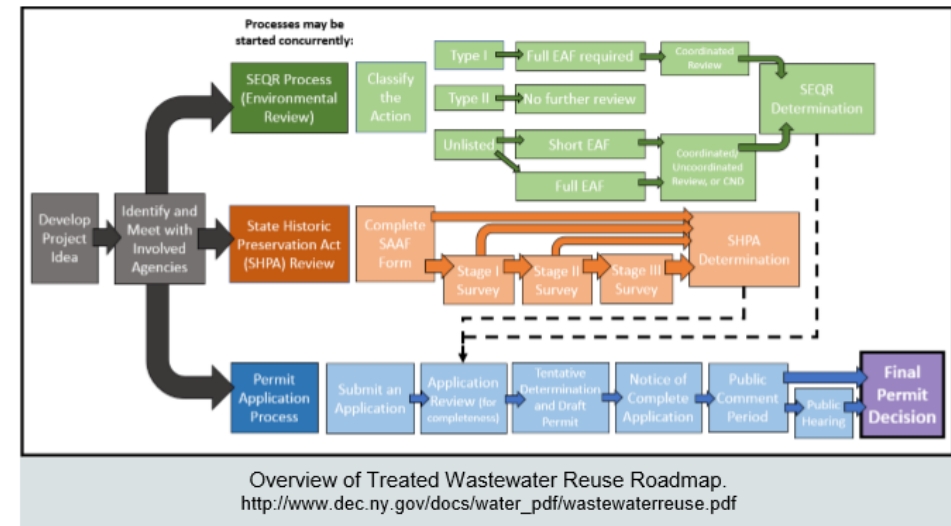
NITROGEN SMART COMMUNITIES

- **A recommended action item within the LINAP Scope**
- **Spur planning and commitments to nitrogen loading reduction and prevention**
- **Modeled on Climate Smart Communities, other similar programs**



LINAP Water Reuse Advisory Workgroup

- Early LINAP Scope action item
- A workgroup was established
- Need for a guide to explain the permitting process (interactive roadmap was created)
- Golf course irrigation

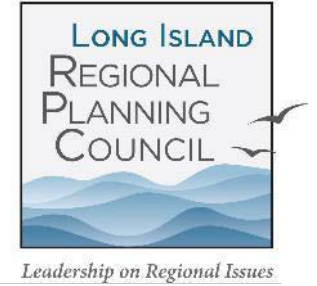


Long Island Water Quality Data Sharing (LIQWIDS) system

- ❑ A one-stop portal for water quality data collected in Nassau and Suffolk Counties.
- ❑ Will store, manage, and query most chemical and microbiological contaminants data, allowing resource managers to access data necessary for protecting supply and determining the best uses.
- ❑ A recommendation in the LINAP scope.



Outreach



- ❑ Monthly Newsletters, 1,722 subscribers
- ❑ Web Page
 - Technical Resources
 - Workgroup Meeting Summaries
 - Newsletter Archive
 - Links to LINAP Partners
 - Announcements

To sign up for the LINAP Newsletter go to:

<https://www.dec.ny.gov/lands/103654.html>

How LINAP Projects Line Up With the OATF Objectives/Deliverables

Objectives/Deliverables:

No later than December 31, 2018, the task force shall transmit to the governor, the temporary president of the senate and the speaker of the assembly a report containing the following:

- (a) an assessment of the anticipated impacts related to ocean acidification;
- (b) recommendations related to mechanisms New York could establish to provide stronger, more protective standards, and the implementation and enforcement of such standards in the context of ocean acidification;
- (c) recommendations regarding adaptive measures which may be taken to respond to ocean acidification, including measures to:
 - (i) identify and monitor early effects of ocean acidification on marine life, animals, plants and natural communities; and
 - (ii) integrate ocean acidification mitigation and adaptation strategies into state environmental plans;
- (d) recommendations on state and local regulatory and/or statutory alterations to respond to the impacts of ocean acidification;
- (e) review existing scientific literature and data on ocean acidification and how it has directly or indirectly affected or may potentially affect commercially harvested and grown species along the coast;
- (f) identify and monitor the factors contributing to ocean acidification; and
- (g) recommendations to increase public awareness of ocean acidification.

How LINAP Projects Line Up With the OATF Objectives/Deliverables (continued)

Objective **b:** Recommendations related to mechanisms New York could establish to provide stronger, more protective standards, and the implementation and enforcement of such standards in the context of ocean acidification.

- ❖ Fertilizer workgroup

Objective **c:** Recommendations regarding adaptive measures which may be taken to respond to ocean acidification...

- ❖ Nutrient Bioextraction Initiative – using seaweed/shellfish aquaculture to remove nitrogen
- ❖ LINAP's Water Reuse Initiative
- ❖ South Shore Water Reclamation Facility Reconstruction and Resiliency Upgrades
- ❖ South Shore Water Reclamation Effluent Diversion Project
- ❖ SC Sewering Projects – SC Coast Resiliency Initiative
- ❖ NC Septic Improvement Program

How LINAP Projects Line Up With the OATF Objectives/Deliverables (continued)

Objective d: Recommendations on state and local regulatory and/or statutory alterations to respond to the impacts of ocean acidification

- ❖ SC Sanitary Code Article 6
- ❖ Nitrogen Smart Communities

Objective f: Identify and monitor the factors contributing to ocean acidification

- ❖ SSER Western Bays Water Quality Monitoring, e.g. pH will be measured
- ❖ Long Island Water Quality Integrated Data Sharing (LIQWIDS) system

Objective g: Recommendations to increase public awareness of ocean acidification

- ❖ LINAP Newsletter (monthly updates)
- ❖ LINAP Events newsletter

THANK YOU

Kyle Rabin
*Program
Manager*

**Long Island
Regional
Planning Council**



Leadership on Regional Issues



**Department of
Environmental
Conservation**



Long Island Nitrogen Action Plan

<https://lirpc.org/linap/2087/>

<https://www.dec.ny.gov/lands/103654.html>