Peconic Estuary Partnership

Technical Advisory Committee (TAC) Meeting

February 10, 2021 10:00am – 12:30pm

Zoom Conference Call

Attendees: Sarah Schaefer (PEP), Joyce Novak (PEP), Lauren Scheer (PEP), Elizabeth Hornstein (PEP), Matthew Scalfani (CCE), Steve Raciti (Hofstra University), Beth Lamoureux (Anchor QEA, LLC.), Aimee Boucher (USEPA), Alexa Fournier (NYSDEC), Andy Seal (SCDHS), Brian Pederson (SCDHS), Cassandra Bauer (NYSDEC), Chris Clapp (TNC), Chris Gobler (SUNY Stony Brook), Don Walter (USGS), Ed Bausman (Town of Shelter Island), Jefferson Murphree (Town of Riverhead), Jon Wanlass (SCDHS), Julia Socrates (NYSDEC), Kathleen Fallon (NY Sea Grant), Ken Zegel (SCDHS), Kim Shaw (Town of East Hampton), Lauren McGrath (LI Farm Bureau), Lisa Liquori (Town of East Hampton), Michele Golden (NYSDEC), Nancy Pierson (SCDHS), Mike Jensen (SCDHS), Pat Aitken (PEPC), Chris Schubert (USGS), Josh Halsey (PLT), Debbie Aller (CCE), Rachel Neville (SSER), Sally Kellogg (SSER), Brian Frank (Town of East Hampton), Nicole Maher (TNC), Kate Rossi- Snook (CCOM), Maureen Dunn (Seatuck), Michael Collins (Town of Southold), Paul Misut (USGS), Pio Lombardo, Ron Busciolano (USGS), Stephen Terracciano (USGS), Emily Hall (Seatuck), Tom Iwanejko (SC), Tony Leung (NYSDEC), Diana Lynch (SC Parks)

1. **Welcome & Introductions** –Matthew Sclafani (TAC Chair)

2. **TAC Meeting Summary** – Matthew Sclafani
   - Review of the November Technical Advisory Committee (TAC) Meeting Summary - minutes approved by the committee.

3. **PEP January Program Update Review** – Sarah Schaefer (PEP Program Coordinator) & Elizabeth Hornstein (PEP State Coordinator)
   - The committee was asked to come with any questions after reviewing the January PEP Program Update.
   - PEP provided updates in the January PEP Update project table (attached).
   - Updates presented that are not included in the table:
     - The Peconic Land Trust Presents: The Living Shoreline- Panel Discussion 2/11/2021 6-8pm. Panelist- Elizabeth Hornstein, Steve Schott (CCE) and Matt Swain (Peconic Land Trust).

- Critical Lands Protection Strategy Tool Workshop was held 1/29/21- Info available here on PEP's Climate Change webpage: https://www.peconicestuary.org/projects/resilient-communities-prepared-for-climate-change-2/
- PEP Biennial Conference will be held virtually April 14th-16th.
- Elizabeth Hornstein stated the next Natural Resources Subcommittee (NRS) meeting will be held March 24th, 2021 10:00 am- 12:30 pm. The meeting focus will be on horseshoe crab monitoring and conservation efforts from NYSDEC and CCE. Will be discussing the development of a horseshoe crab restoration and protection strategy- identified as a priority by the NRS and the 2020 PEP Habitat Restoration Plan.
- Joyce Novak (PEP Director) announced that The Research Foundation at SUNY Stony Brook will be the new host of the PEP. The transition will occur over the next 10 months. Continue to work towards the completion of Goals and Actions outlined in the 2020 PEP CCMP.

4. **Presentation: Nitrogen Load Reduction Cost Assessment Project Update –** Beth Lamoureux (Anchor QEA)
   Link to presentation: https://www.peconicestuary.org/pep-nitrogen-load-reduction-cost-assessment-project-update-2021/
   - Goal of the project is to compile and assess the cost per pound of nitrogen reduction to groundwater for various nitrogen reduction best management practices (BMPs) currently being employed throughout the country to provide a decision-making tool to guide cost effective management scenarios to reduce nitrogen on a subwatershed basis in the Peconic Estuary. The objective is to support the Peconic Estuary Partnership (PEP) and stakeholders achieve nitrogen load reductions to groundwater within the Peconic Estuary watershed.
   - Status: Baseline Cost-Benefit Source Documentation Memorandum is still being finalized with partners. The next step is to develop the Draft Cost-Benefit Analysis Summary (cost per pound nitrogen reduction for BMPs), develop the online information dissemination platform (example of online platform was presented at the meeting- modeling after the Cape Cod Commission Tool: https://www.watershedmvp.org/start), and final reporting.
   - Comments:
     - Chris Gobler: Suggested including source separation in the project. Asked if the project considered the development of a nitrogen credit system- could include this in a "future recommendations" section.
     - Chris Clapp: The project is based on the current paradigm in which we live in, instead of a future paradigm. Regulations regarding where farmers can source fertilizers (i.e. Long Island) from could help advance BMPs such as

aquaculture and water reuse. Ideas for how our current systems could be changed to foster improvements in how we handle nitrogen could be included in the tool content in a "future recommendations" section.
    - Matt Sclafani: Suggested this should be an adaptive tool that can reflect changing costs and implementation. There will be interplay with the USGS Peconic Estuary Solute Transport Model and this project will be a way to point people to specific solutions.
    - Debbie Aller: Requested clarification on the review the BMP Source Documentation Memo process/ status and how comments were incorporated. Asked what the frequency will be for updating the tool- this is to be determined with current resources.
    - Debbie Aller/ Josh Halsey: Uncertainty/complexity in non-point source BMPs needs to be captured in the information presented at the tool.

5. **Presentation: Preliminary findings from an atmospheric nitrogen deposition monitoring network on Long Island –** Steve Raciti (Hofstra University)
   Link to presentation: https://www.peconicestuary.org/preliminary-findings-from-an-atmospheric-nitrogen-deposition-monitoring-network-on-long-island-ny-2021/
    - Renewed Water Quality Monitoring Program in Hempstead Bay- Revived Town of Hempstead Conservation and Waterways sampling- 50 years of water quality monitoring, network of water quality stations throughout South Shore Estuary Reserve Western Bays. Added Atmospheric Nitrogen Deposition stations. Current program supported by the Long Island Regional Planning Council and Hofstra University- needed to track impacts of major waste water treatment plant upgrades, bioextraction projects and Bay Park Conveyance Project.
    - Atmospheric N loads to Long Island's coastal waters are a large proportion of total N loads. Current estimates are based on National Trends Network (NTN)- e.g. CASTNET/ NADP. Dry deposition (CASTNET sites) is not recorded in the Long Island region, there is one wet deposition National Atmospheric station on Long Island in Southold, NY, through the National Atmospheric Deposition Program (NADP). The station is not representative of the land use across Long Island; however we use data from the existing stations to extrapolate atmospheric nitrogen loads across the region. The NTN is meant to analyze continental trends, not capture more localized trends- stations are intentionally located far from urban areas.
    - N Dry deposition stations are composed of a mixed ion-exchange (IER) resin column. Allows the stations to be left in the field for periods of time to allow for analysis of dry deposition over that entire period of time (reduces frequency needed to go out to each site).
        - Bulk deposition- Rainfall captured under open sky, mostly wet deposition.
        - Throughfall deposition- Tree canopy used as a collecting surface for dry, fog, and cloudwater deposited pollutants, wet + dry deposition. Provides total N atmospheric deposition.

- Results from Steve Raciti's study in Boston area show that NTN under predicts N deposition in urban and suburban areas. Deposition in urban/ suburban regions was twice as high as modeled from the NADP/ CASTNET data. Strong correlations between N deposition and anthropogenic factors.
- Existing Southern Nassau County N deposition monitoring network consists of 12 monitoring sites- each site has 3 throughfall collectors, 3 bulk collectors each collected at 6-week periods.
- Steve Raciti's Lab funded a short-term, low density network in Suffolk and norther Nassau County. Consisted of 14 sites, each site has 3 throughfall collectors, 0 bulk collectors each collected at 12-week periods. Co-located sites near the NADP equipment in Southold, NY. Preliminary results show that more rural areas have lower levels of N deposition and more urban areas have higher levels of N deposition.
- There is currently no long-term atmospheric deposition data to tell us if COVID related shut downs decreased N deposition. Long-term data collection is needed to answer these types of questions.
- Preliminary Conclusions:
    - Atmospheric deposition is a major source of N pollution to LI coastal water
    - Variable in space and time, but not random
    - Correlated with on-road emissions, development, and likely other factors
    - NTN sites (e.g., Cedar Beach) represent rural background
        - Probably not representative of greater Long Island region
        - Likely underestimates urban and suburban sources
- Future Research Needs:
    - Long-term measurements to quantify N deposition on LI
        - Major source of uncertainty in N loading models
        - No formal monitoring network outside of southern Nassau
    - Capture N deposition trends related to:
        - On-road emissions, point sources (e.g., power plants), land use/land cover, proximity to urban areas
    - NYS and Long Island can take a leadership role
        - Establish urban and suburban deposition monitoring network
        - Lay groundwork for locating permanent, federally-supported monitoring sites (e.g., NADP and CASTNET
    - Data can guide conservation management plans for LIS, Peconic, and SSER regions
        - Inform realistic targets for what can be achieved by attenuating other sources (e.g., WWTPs)
    - Advance LINAP goals: 1) improve understanding of nitrogen pollution, 2) determine N reduction strategies and targets, 3) enact policies to alleviate N pollution
- Comments:

- Matt Sclafani: Asked if the spatial extent of N load sources can be defined to direct management actions. Answer: Long-range and short-range impacts from N load sources. Need increased network of N atmospheric deposition sites to better understand impacts.
- Matt Sclafani: Asked if the annual input to the Peconic Estuary surface water could be calculated from Steve Raciti's preliminary studies on Long Island. Answer: Preliminary work and cannot provide an accurate estimate at this time.
- Debbie Aller: Asked what the total cost is of installing one of the dry deposition monitoring sites. Answer: Far less than installing the same amount of NTN sites (26 sites) to measure wet and dry deposition. More detailed estimates can be provided if needed.
- Debbie Aller: Asked in rural (agricultural) areas, do you also see greater N deposition in spring/summer associated with tillage on-farms and CO2 release? Answer: Temporal patterns are seen in rural agricultural areas, some has to do with atmospheric chemistry, fertilizer application and tillage. Preliminary data shows these trends but we need more sites near agricultural areas to fully understand seasonal trends.
- Chris Schubert: Asked were there additional NTN sites on LI (e.g., Eisenhower Park?) that were discontinued because of funding cuts? If so, could these be low-hanging fruit for new sites? Answer: No, Steve Raciti states he believes there has only been the one established- in Southold, NY. The lower cost atmospheric deposition monitoring stations should ideally be set up first to inform the locations where one might want to establish new NTN sites.
- Chris Clapp: Commented that NTN sites are showing us a steady decline regionally over time in atmospheric N deposition. Impact of catalytic converters- instead of releasing N out in the atmosphere the N is now deposited on the roadways locally. Asked how does that get captured in this monitoring? Answer: We are seeing a change in that NOx, Nitrate and Nitric Acid, was the main component in atmospheric deposition, compared to now we are seeing that Ammonia and Ammonium are the dominant component in atmospheric deposition. Catalytic converters are a reason for that. Additionally, populations are increasing and people are driving more miles which also contributes to the trend we are seeing. Steve Raciti's atmospheric deposition monitoring network can measure different species of Nitrogen in wet and dry deposition and can analyze trends in each species.
- Chris Gobler: Commented that rates of atmospheric deposition have been dropping regionally with the implementation of the Clean Air Act. Asked how much have rates of atmospheric deposition decreased in the last century because of the Clean Air Act? Answer: We are seeing considerable declines in the nitrate proportion in atmospheric deposition which is due to the Clean Air Act and use of catalytic converters. But we are not seeing a clear decline in Ammonia and Ammonium at those same rates, it is clear Nitrous Oxide

and NOx levels are decreasing at a faster rate. As we continue to use less fossil fuels we should continue to see this declining trend.

- Matt Sclafani: Asked about the method for comparing the NTN data and Steve Raciti's short-term atmospheric monitoring network data. Answer: A direct comparison was done between data available from NTN during the time period of collection. Steve Raciti's sampling methods are typically at 100% extraction efficiency (+/- instrument error).
- Maureen Dunn: Asked what role does relative humidity play for regional values? Answer: High temperatures and high humidity lead to greater rates of atmospheric chemistry.
- Joyce Novak: Noted research and monitoring of dry deposition is a goal for the PEP in the 2020 CCMP. Suffolk County Department of Health Services staff maintain and collect samples at the existing NADP site in Southold, NY.
- Paul Misut: Asked do you think it would be helpful to analyze wind fields in selecting monitoring sites? Answer: Yes, there are patterns of deposition based on prevailing wind direction.

6. **Next Steps and Meetings – Matthew Sclafani**

   2021 TAC Meeting Schedule:
   May 19th, 2021 10:00 am – 12:30 pm - TBD location
   August 18th, 2021 10:00 am – 12:30 pm - TBD location
   November 17th, 2021 10:00 am – 12:30 pm - TBD location

7. **Public Comment Period-** meeting attendees were asked to indicate in the Zoom chat if you would like to speak.
   - No comments.

8. **Adjourn**

Peconic Estuary Partnership

January 2021 PEP Update

Project	Status	Current Activity
Living Shoreline Project at Widows Hole-Greenport Partners: CCE and PLT	✓ Complete ○ Monitoring ongoing ○ Seeking funding for Phase II	Phase II of the project scope, extending the living shoreline to the entire property, has been developed by CCE and added to PEP Habitat Restoration Plan- seeking funding with partners.
Seagrass Bio-optical Model Partner: SUNY Research Foundation	✓ Complete ○ Developing ArcGIS tool for stakeholders	Creating an ArcGIS online map of project results to make site specific information easily available to inform eelgrass management and restoration programs in the Peconic Estuary.
CLPS Update and Climate Ready Assessment Services for PEP and Shinnecock Indian Nation Partner: Anchor QEA, LLC.	✓ Complete ○ Developing training workshops- end of January 2021	Planning training workshops for municipal staff and resource managers to utilize updated Critical Lands Protection Strategy (CLPS) prioritization maps and climate resiliency tools.
Water Quality Monitoring Assessment Partner: CoastWise Partners, LLC.	✓ Complete ○ EPA reviewing WQ Monitoring Strategy	Monitoring Strategy will be incorporated into CCMP 2020.
Monitoring Collaborative	✓ 2020 goals met ○ 2021- 2023 next steps outlined in Water Quality Monitoring Strategy	Monitoring Collaborative met 10/19/2020 to formally accept WQ targets and explore R-tools for reporting and analysis. Next meeting in early 2021.
2020 Habitat Restoration Plan Update	✓ Complete ○ EPA reviewing Habitat Plan ○ Developing updated interactive ArcGIS map	Will be incorporated into CCMP 2020. 5 new projects added to the plan and 2 projects updated. 46 total projects in the Plan, ArcGIS online map will be updated accordingly.
Non-Point Source Pollution Management Project Partner: Village of Sag Harbor	✓ Complete	Two rain gardens were installed at Havens Beach in Sag Harbor on 6/26/20. Educational sign was installed 9/23/20
Spring 2020 Alewife Monitoring	✓ Complete ○ Planning spring 2021 alewife monitoring	Video camera installed at Grangebel fishway on Peconic River for second year. From 02/28/20 - 05/18/20, 57,924 alewife are estimated to have passed through the camera.
Woodhull Dam Fish Passage Construction	○ Pending grant funding award	Construction of the fish passage can begin when all necessary grant funding is available and a contractor is selected.
Upper Mills Fish Passage Engineering Design and Permitting Partner: L.K. McLean Associates	○ Engineering Design and Permitting ongoing. Expected completion 8/2021	Design alternative selected at April 9th, 2019 stakeholder meeting. Engineering designs have been finalized, permitting is in progress. Anticipated completion 8/2021.
Meetinghouse Creek Main Road Wetland Construction/ Restoration	○ Funding is secured, RFP was advertised and contractor has been selected for Engineering Design and Permitting.	An RFP for Engineering Design and Permitting was advertised 10/19/20, responses were due 12/1/2020. PEP will begin work with selected contractor in 2021.
Narrow Road Wetland Restoration	○ Seeking funding for engineering designs and construction	Working with NYSDEC, Ducks Unlimited, and the Town of Southold to secure grant funding for engineering designs and construction.
Lake Montauk Alewife Access and Habitat Enhancement	○ Partial funding secured from SC Capital Budget (availability uncertain)	Partial funding secured for Lake Montauk portion and will move forward with construction project in coordination with partners. Seeking funding for Stepping Stone Pond portion.

Paul Stoutenburgh Preserve Habitat Restoration	○ Pending funding availability from SC Capital Budget (availability uncertain)	An RFP for Engineering Design and Permitting was planned to be advertised for habitat restoration at the site.
Expansion and Monitoring of the Town of Southold Living Shoreline Project Partner: CCE	○ Ongoing, will be completed 9/2021	Expansion to an existing Town of Southold Living Shoreline Demonstration Project and the addition of monitoring services at the project site. Quantification of nitrogen uptake of *Spartina alterniflora* and ribbed mussels.
Nitrogen Load Reduction Assessment Project Partner: Anchor QEA, LLC.	○ Ongoing, will be completed 9/2021 ○ Presentation at 2/10/21 TAC meeting	Compile and assess the cost per pound of nitrogen reduction to groundwater for various nitrogen reduction best management practices (BMPs) currently being employed throughout the country to provide a decision-making tool to guide cost effective management scenarios to reduce nitrogen on a subwatershed basis in the Peconic Estuary.
Peconic Estuary Ecosystem Study Partners: NYSDEC and SUNY Stony Brook	○ Advertising for a post-doctoral position ○ Anticipated completion 3/2023	Analyze spatial and temporal trends in the Peconic Estuary finfish trawl survey dataset, and develop risk metrics from ecological relationships for the Peconic Estuary. Develop an ECOSIM quantitative modeling framework that can represent all major ecosystem functional groups and can be used to identify and assess structural changes in the ecosystem in response to environmental change.
New USGS Continuous Tide-warning Station Partners: NYSDEC and USGS	○ Station installed fall 2020 ○ WQ equipment funding from SC Capital Budget (availability uncertain)	Established a third continuous station on at the South Ferry dock on Shelter Island. Parameter equipment purchased will be prioritized as funding is available with guidance from the PEP TAC and PEP Management Conference approval.
Peconic Estuary Solute Transport Model Partner: USGS	○ Ongoing, will be completed spring 2021	A tool to estimate time-varying nitrogen loading rates to the Peconic Estuary. USGS is in the final model development phase and scenario finalization. Next project meeting February 2021.
Hardened Shoreline Analysis	○ Complete, report will be completed and shared	ArcGIS mapping of current hardened shoreline vs 2003 hardened shoreline analysis.
Quality Assurance Project Plan Development for Supplemental Water Quality Sediment Data Collection Partner: Tetra Tech, Inc.	○ Ongoing, QAMP/QAPP completed and sent for NYSDEC and EPA review and approval in 12/2020	A NYSDEC and EPA approved Quality Assurance Management Plan (QAMP) and QAPP template is under development; goal is to use QAMP/ QAPPs to identify and prioritize subwatersheds in the Peconic Estuary that should be targeted for water quality improvement activities; ensure water bodies are properly listed on the NYS Impaired Waters list.
Organizational Assessment Partner: CoastWise Partners, LLC.	○ Ongoing, review underway	After Management and Policy Committee approval of the PEP Organizational Strategy the document will be formally approved by the EPA and incorporated into CCMP.
Wildlife Monitoring Network	○ Developing final website content	Working with Seatuck to develop the Wildlife Monitoring Network website to create a brand and central website where all LI wildlife monitoring projects are housed together (links to wildlife surveys and resources).