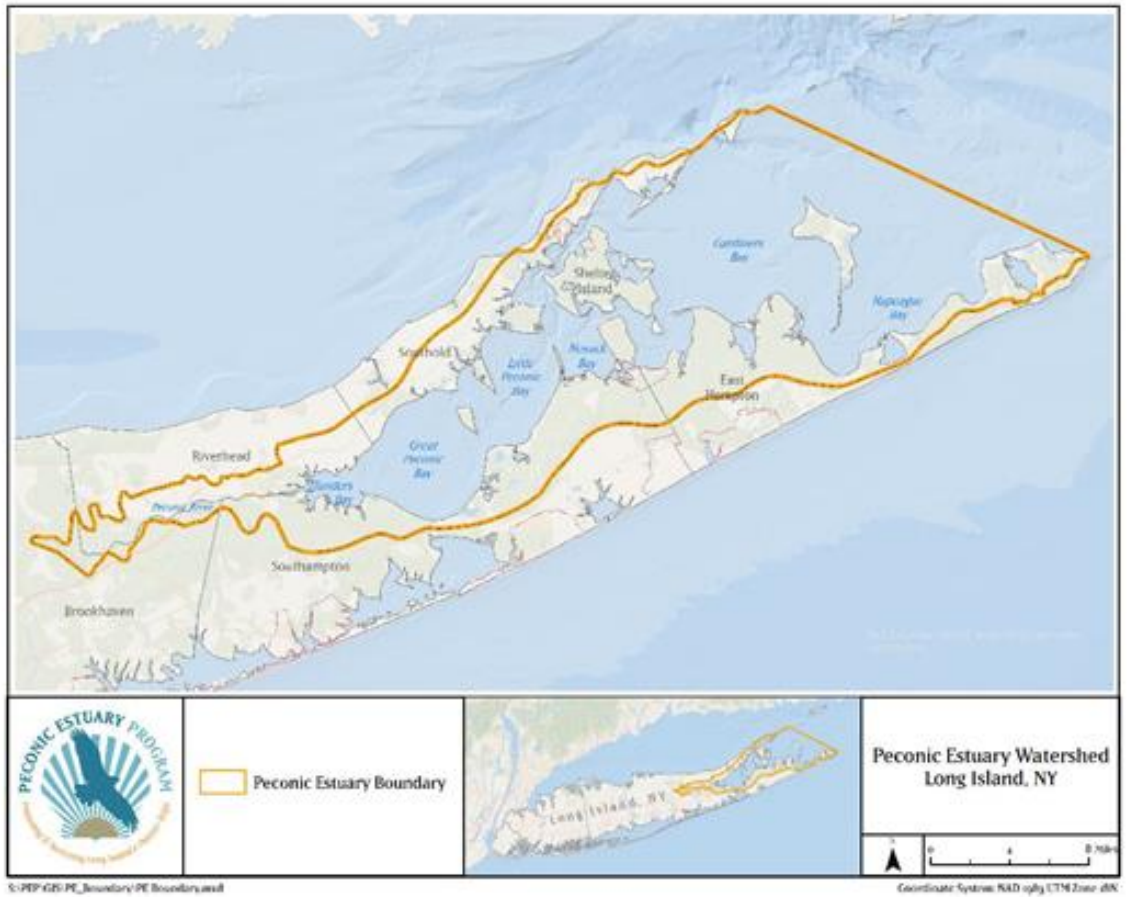
PEP Water Quality Monitoring Strategy



Peconic Estuary Partnership's
Water Quality Monitoring Strategy

May 2020

Peconic Estuary Partnership
PROTECTING AND RESTORING LONG ISLAND'S PECONIC BAYS

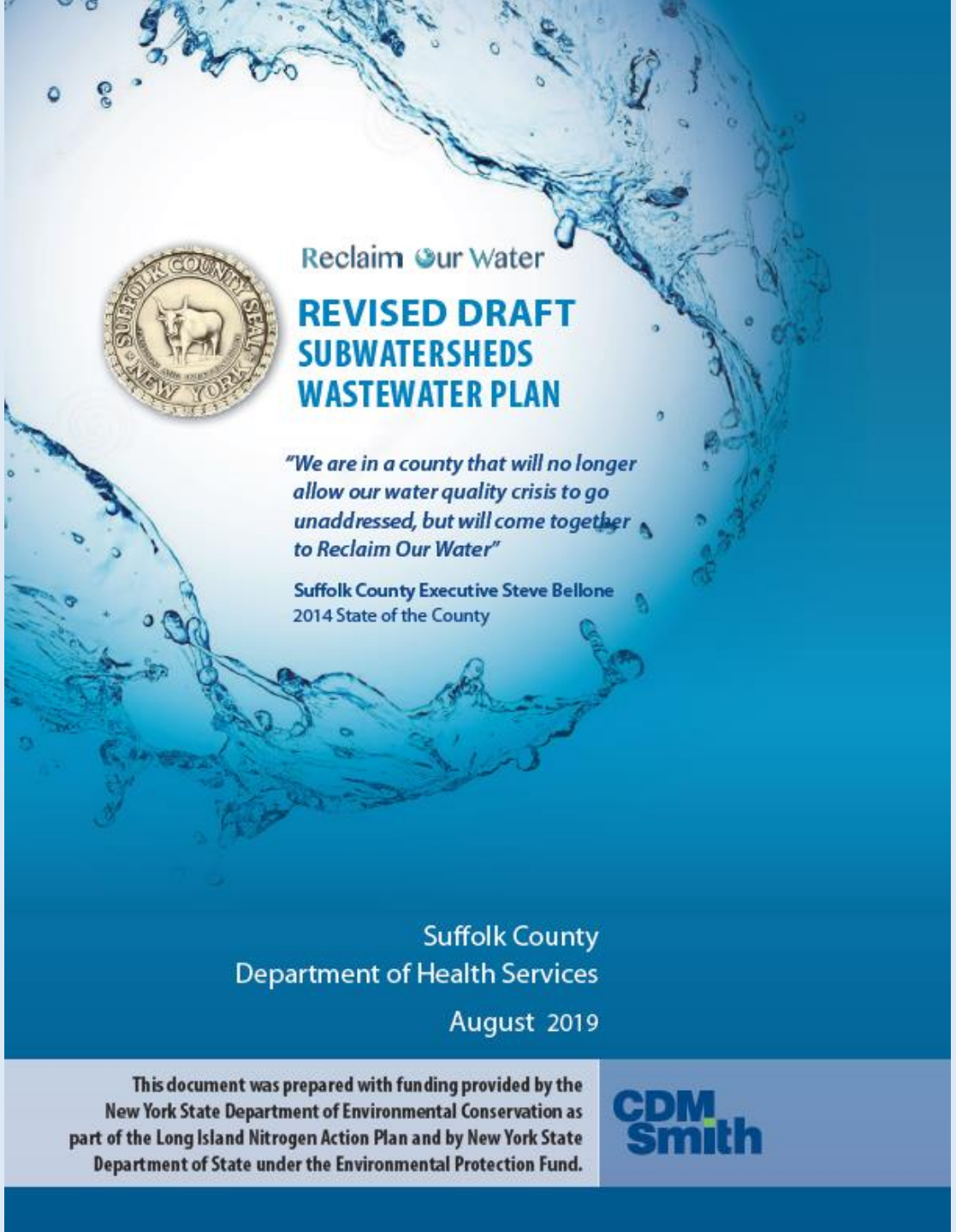
NE IW PCC

Dec 4, 2019 PEP TAC Recommendations

Approved by PEP Management and Policy Committees on Feb 5, 2020

Adopt provisional targets for water clarity (Secchi disk depth), chl-*a* concentration, and dissolved oxygen (DO) based on those proposed in the Suffolk County 2019 Subwatersheds Wastewater Plan.

Report on an annual basis.



Adopted Reporting/Management Segments: Eastern, Central and Western Zones

Use ‘stoplight graphics’ for public-facing documents, collating data by main stem estuary segment.

Secchi depth and chlorophyll-*a* targets in the three Peconic Estuary reporting zones for the years 1976 – 2018.

Data source: SCDHS

Estuary Segment	YY	Median Chla (µg/L)	Median Secchi Depth (ft)
West	1976	22.2	3.5
West	1977	--	6.0
West	1978	--	5.3
West	1979	--	5.0
West	1980	--	--
West	1981	--	--
West	1982	--	--
West	1983	--	--
West	1984	--	--
West	1985	--	2.5
West	1986	--	4.0
West	1987	--	4.0
West	1988	12.6	3.5
West	1989	5.0	7.0
West	1990	4.2	5.0
West	1991	6.0	3.5
West	1992	4.0	4.0
West	1993	3.8	4.5
West	1994	3.5	5.5
West	1995	6.9	4.0
West	1996	7.4	5.5
West	1997	7.8	5.5
West	1998	3.8	5.5
West	1999	3.4	5.5
West	2000	3.2	5.0
West	2001	4.1	5.0
West	2002	3.8	5.5
West	2003	4.3	5.5
West	2004	4.4	5.0
West	2005	3.9	5.5
West	2006	4.8	6.0
West	2007	4.7	6.0
West	2008	4.8	5.5
West	2009	4.3	5.0
West	2010	9.0	5.0
West	2011	4.9	5.0
West	2012	3.9	5.0
West	2013	5.1	7.0
West	2014	3.2	6.0
West	2015	2.6	5.5
West	2016	3.6	4.5
West	2017	6.7	4.0
West	2018	5.4	5.0

Estuary Segment	YY	Median Chla (µg/L)	Median Secchi Depth (ft)
Central	1976	--	--
Central	1977	--	--
Central	1978	--	--
Central	1979	--	--
Central	1980	--	--
Central	1981	--	--
Central	1982	--	--
Central	1983	--	--
Central	1984	--	--
Central	1985	--	--
Central	1986	--	5.0
Central	1987	--	3.5
Central	1988	12.0	4.5
Central	1989	4.6	7.0
Central	1990	3.5	7.0
Central	1991	8.6	3.3
Central	1992	3.2	5.5
Central	1993	3.0	6.5
Central	1994	2.7	7.5
Central	1995	4.8	5.5
Central	1996	3.9	7.5
Central	1997	4.1	7.5
Central	1998	2.6	7.5
Central	1999	2.2	7.5
Central	2000	1.6	7.0
Central	2001	2.4	7.0
Central	2002	3.1	7.0
Central	2003	2.3	11.0
Central	2004	2.5	8.0
Central	2005	1.9	8.0
Central	2006	2.9	10.0
Central	2007	3.8	10.0
Central	2008	2.9	8.0
Central	2009	2.5	8.0
Central	2010	4.5	6.5
Central	2011	2.8	7.5
Central	2012	2.7	6.0
Central	2013	3.1	8.0
Central	2014	2.3	7.0
Central	2015	1.9	7.0
Central	2016	2.4	6.0
Central	2017	3.3	6.0
Central	2018	2.3	6.0

Estuary Segment	YY	Median Chla (µg/L)	Median Secchi Depth (Fft)
East	1976	--	--
East	1977	--	--
East	1978	--	--
East	1979	--	--
East	1980	--	--
East	1981	--	--
East	1982	--	--
East	1983	--	--
East	1984	--	--
East	1985	--	--
East	1986	--	6.5
East	1987	--	5.0
East	1988	7.5	6.0
East	1989	4.5	8.5
East	1990	3.0	8.5
East	1991	5.0	6.0
East	1992	2.5	7.5
East	1993	2.8	7.5
East	1994	2.4	9.0
East	1995	2.9	7.0
East	1996	3.0	10.0
East	1997	3.2	10.0
East	1998	2.1	12.0
East	1999	1.6	11.0
East	2000	1.2	9.0
East	2001	1.9	10.0
East	2002	2.5	8.5
East	2003	2.4	12.0
East	2004	2.8	9.5
East	2005	1.5	11.0
East	2006	2.7	10.0
East	2007	3.3	10.0
East	2008	2.4	10.0
East	2009	2.2	11.0
East	2010	2.8	12.0
East	2011	2.4	10.0
East	2012	2.1	8.0
East	2013	2.4	11.0
East	2014	1.9	9.0
East	2015	1.5	10.0
East	2016	2.2	8.0
East	2017	2.1	8.0
East	2018	2.9	8.0

As an initial target for pathogens, adopt the *Enterococcus* threshold currently used by the County to determine swimming beach closures

New standards are currently under review. Once new standards are in place, update the target.

Example stoplight graphic for *Enterococcus*-related beach closures for 2010-2018

Beach Name	2010	2011	2012	2013	2014	2015	2016	2017	2018	Subtotals
Alberts Landing Beach	0	0	0	0	0	0	0	0	1	1
Camp Blue Bay Beach	0	0	0	0	0	0	0	0	1	1
Camp Quinipet Beach	0	1	0	0	0	2	1	0	1	5
Clearwater Beach	0	0	0	0	0	0	0	0	1	1
Cornell Cooperative Extension Marine Center Beach	0	0	0	0	0	0	0	0	0	0
Crescent Beach - Shelter Island	0	0	0	0	0	0	0	1	0	1
Culloden Shores Beach	0	0	0	0	0	0	0	0	0	0
Devon Yacht Club Beach	0	0	0	0	0	0	1	0	1	2
East Lake Drive Beach	0	0	0	0	0	0	0	0	0	0
Fifth Street Park Beach	0	0	0	0	0	2	0	2	1	5
Fleets Neck Beach	0	1	0	0	0	0	0	0	0	1
Foster Memorial Beach	0	0	0	0	0	0	0	0	0	0
Founders Landing Beach	2	1	1	1	0	0	1	3	1	10
Goose Creek Beach	1	0	1	0	0	0	0	0	0	2
Havens Beach	2	1	0	0	0	0	0	0	0	3
Maidstone Beach	0	0	0	1	0	0	0	0	0	1
Meschutt Beach	0	0	1	0	0	0	1	0	1	3
Nassau Point Causeway Beach	0	1	0	0	0	0	0	1	1	3
New Suffolk Beach	0	1	0	0	0	0	0	0	0	1
Norman E. Klipp Park Beach	0	0	0	0	1	0	0	1	0	2
Perlman Music Camp Beach	0	0	0	0	0	0	1	0	1	2
Pridwin Hotel Beach	1	1	0	0	0	0	0	0	1	3
Shelter Island Heights Beach Club Beach	0	0	1	0	0	0	0	0	1	2
Silver Sands Motel Beach	0	1	0	1	0	0	0	0	2	4
South Jamesport Beach	1	0	1	0	0	0	0	0	2	4
Southampton Peconic Beach & Tennis Club Beach	0	0	0	1	0	0	0	0	0	1
Veteran's Memorial Park Beach	0	1	0	2	0	0	0	0	1	4
Wades Beach	0	0	0	0	0	0	0	1	0	1

Green = zero closures
Yellow = one closure
Red = two or more closures

Data source: SCDHS

Adopted: Track and report water temperature, salinity, pH and harmful algal blooms on an annual basis

- Numerical targets are not currently anticipated for these parameters

Some Key Actions: 2020- 2021

- Initiate work with the New York State Ocean Acidification Task Force to monitor ocean acidification.
- Evaluate the feasibility of including climate change adaptation in water quality models and/or ecosystem models.
- Identify problem areas in individual sub-watersheds or embayments.
- Assess the feasibility of monitoring water quality parameters more frequently at the USGS Peconic River gage site.
- Develop maps of water temperature in potential eelgrass habitat areas to help guide future restoration efforts.

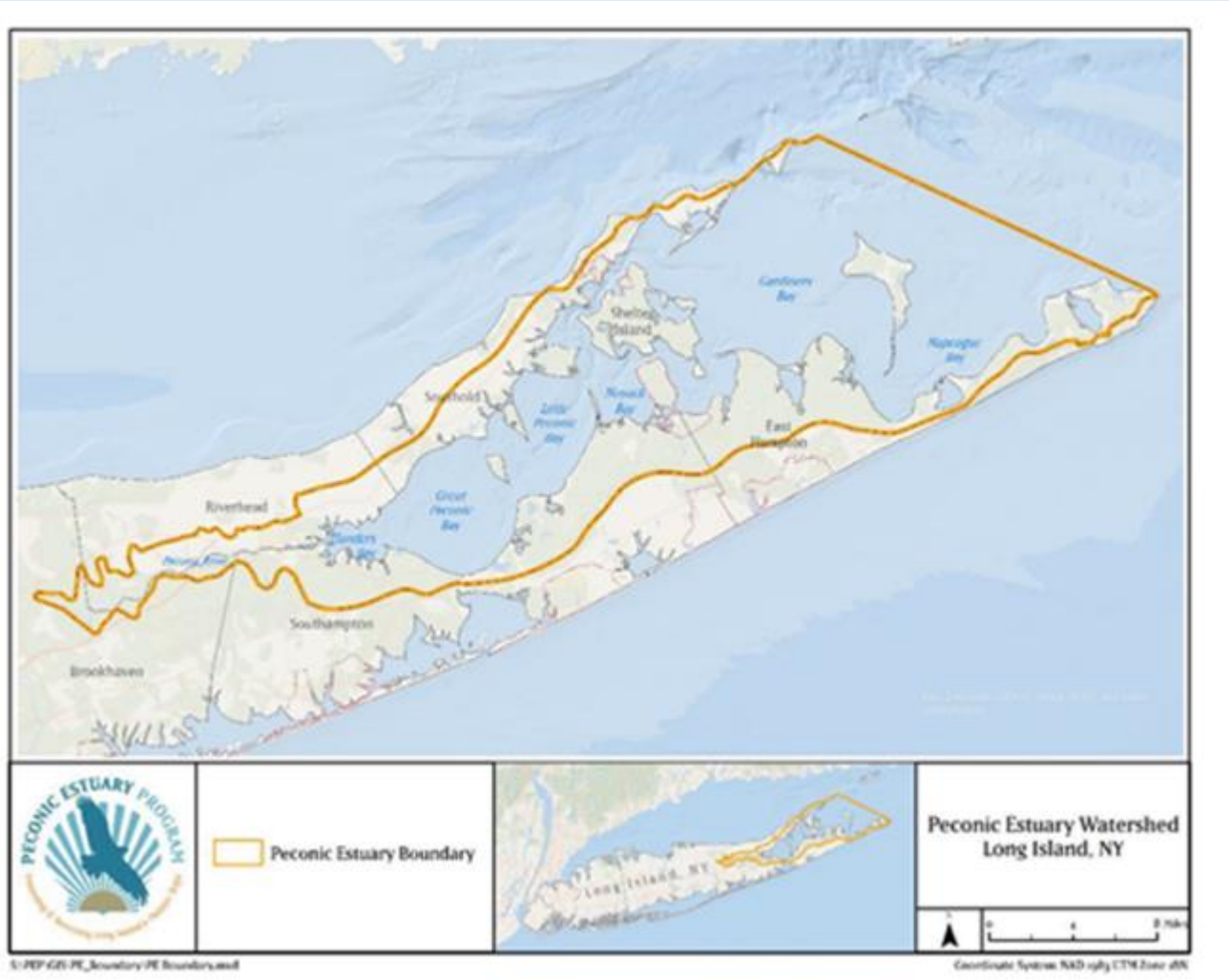
Some Key Actions by year: 2022- 2023

- Examine potential elements of an ‘early warning system’ alert for anticipated water quality issues such as fish kills and HABs.
- Establish a baseline groundwater monitoring network for ecosystem objectives.
- Evaluate how to measure nutrient concentrations/loads in the hyporheic zone (the groundwater-surface water interface).
- Develop a strategy for monitoring streams.
- Work with all parties on issues related to shellfish bed closures and pathogen-related TMDLs at the state and federal levels.

PEP Water Quality Monitoring Strategy: Robust program and clear direction forward

- **Robust water quality monitoring programs** in place
- Estuarine **management zones identified**
- Provisional **targets adopted** for water clarity, chl-a, DO and *Enterococcus* bacteria (for recreational beaches)
- Data gaps and **information needs identified**
- **Reporting tools** for the public developed
- **Long-term commitment** to collect, analyze and report water quality data relevant to track and assess progress toward CCMP Goals.

Questions?
Thank you!



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TAC RECOMMENDATION

On May 4, the TAC approved the following by consensus:

Recommend Management Committee approve and adopt the PEP Water Quality Monitoring Strategy, for inclusion in the 2020 PEP CCMP.