Climate Ready Assessment Services for Peconic Estuary Program and Shinnecock Indian Nation

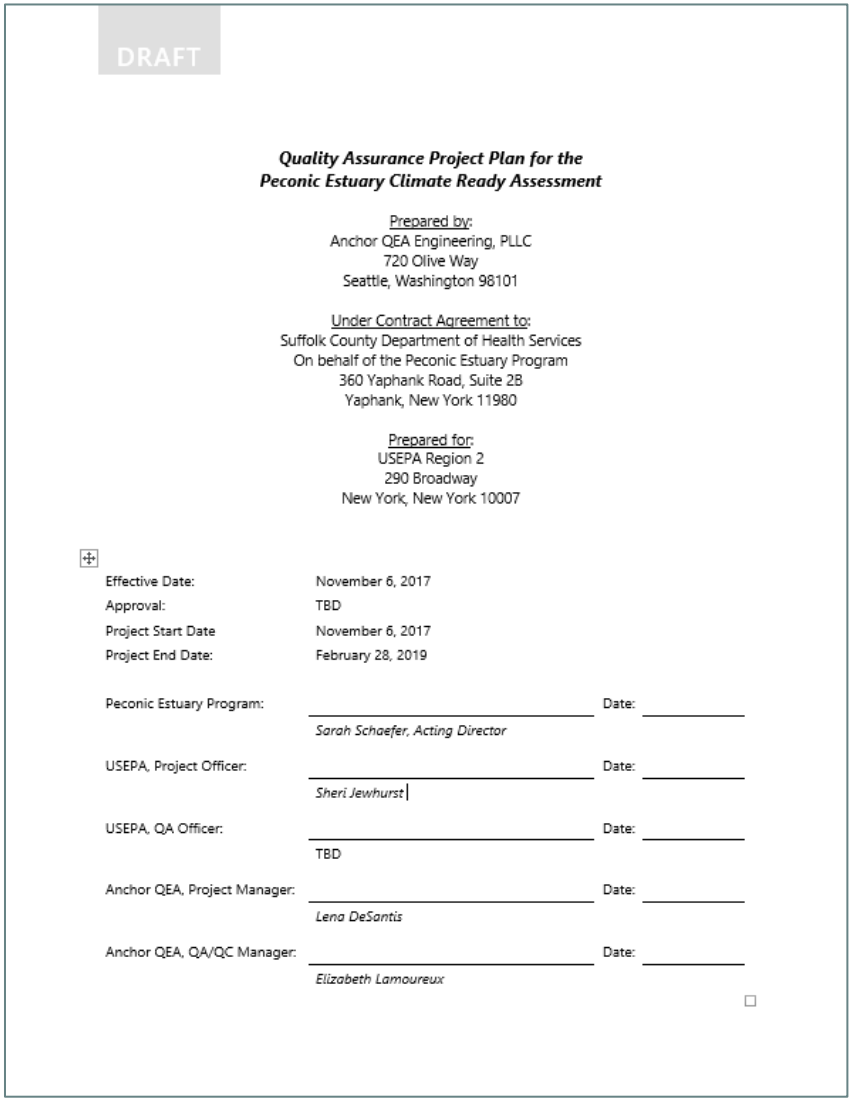
Peconic Estuary Program

Overview and Approach

- **Background:**
  - PEP: Comprehensive Conservation and Management Plan (CCMP) and Critical Lands Protection Strategy (CLPS) have not taken climate change into account
  - Shinnecock Indian Nation: desire to look at climate change risks and vulnerability
- **Approach:**
  - Develop recommendations to augment environmental criteria in the CCMP and update the CLPS
  - Assess risk and vulnerability of the natural resources within the PEP and Shinnecock Nation due to climate change
  - Develop climate ready action plan to address prioritized climate change risks and vulnerabilities

Step 1: QAPP

- Governs Entire Process
- Draft Complete
  - Submitted to USEPA



DRAFT

Quality Assurance Project Plan for the Peconic Estuary Climate Ready Assessment

Prepared by:
Anchor QEA Engineering, PLLC
720 Olive Way
Seattle, Washington 98101

Under Contract Agreement to:
Suffolk County Department of Health Services
On behalf of the Peconic Estuary Program
360 Yaphank Road, Suite 2B
Yaphank, New York 11980

Prepared for:
USEPA Region 2
290 Broadway
New York, New York 10007

Effective Date:	November 6, 2017
Approval:	TBD
Project Start Date	November 6, 2017
Project End Date:	February 28, 2019

Peconic Estuary Program: _____ Date: _____
Sarah Schaefer, Acting Director

USEPA, Project Officer: _____ Date: _____
Sheri Jewhurst

USEPA, QA Officer: _____ Date: _____
TBD

Anchor QEA, Project Manager: _____ Date: _____
Lena DeSantis

Anchor QEA, QA/QC Manager: _____ Date: _____
Elizabeth Lamoureux

Step 2: Develop New Screening Criteria

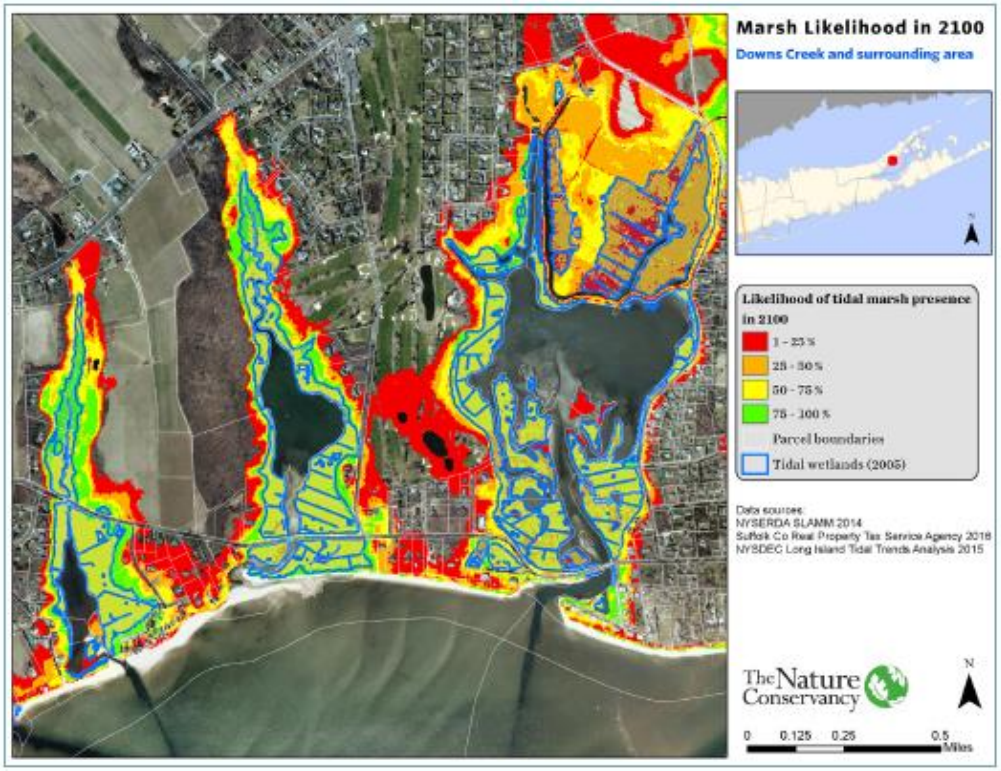
- Develop new CLPS screening criteria and priorities
- Considerations could include:
  - Parcels (developed and undeveloped) predicted to return to underwater or wetland habitat
  - Inland properties (developed and undeveloped) that could transition to shoreline positions under climate change scenarios
  - Existing living shoreline and opportunities for new living shorelines under climate change scenarios
  - Parcels where development might result in increased pressure to disrupt natural processes, including erosion
  - Areas appropriate for inland wetland migration in the face of rising sea level

Step 3: Stakeholder Outreach

- Iterative Process
  - Solicit Input
  - Present Findings
  - Weigh Solutions
- Goal: Increase Participation and Buy-In
  - Overlap with CCMP Process

Step 4: GIS Analysis

- Sea Level Affecting Marshes Model (SLAMM)
- Map inundation related to climate change and wetland migration
- Identify parcels that meet one or more of the CLPS criteria.



Step 5: Perform Climate Change Vulnerability/ Risk Assessment

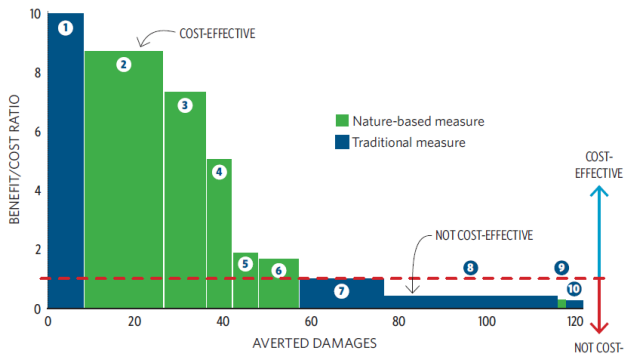
- USEPA's guidance: *Being Prepared for Climate Change, a Workbook for Developing Risk-based Adaptation Plans*

Example Schematic of Multi-criteria Risk Assessment

Step 6: Identify Solutions and Prepare Reports

- Identify opportunities to develop green coastal protection solutions to protect against imminent ***and*** long-term climate change effects
- Emphasize nature-based solutions

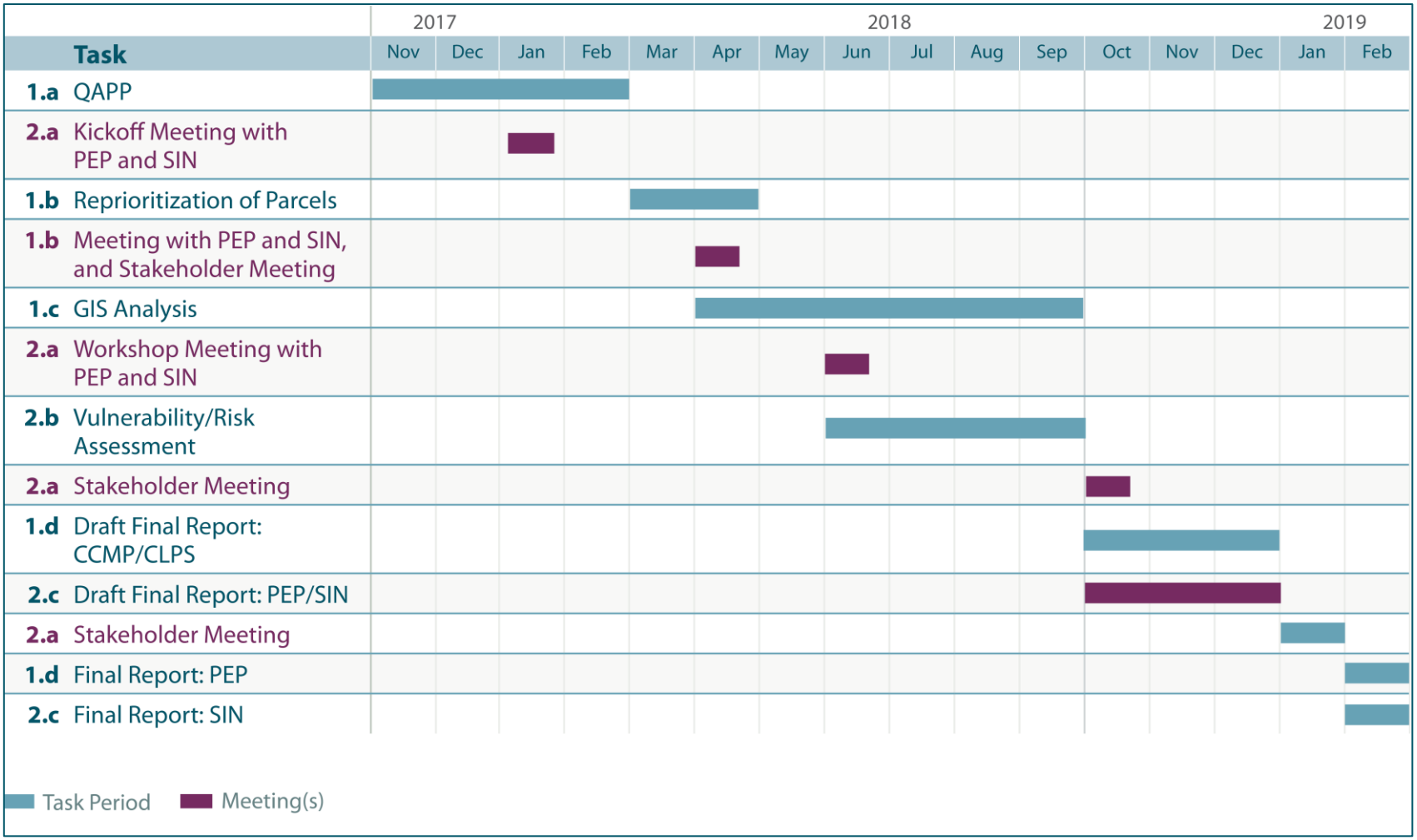
Comparison of the costs and benefits of Risk Reduction measures



The width of each bar represents damages averted (billions of dollars). The red dotted line indicates a benefit to cost ratio of 1. Measures above the line are cost-effective.

MEASURE	CRITERIA
❶ Sandbags	Used in 2.9 million houses for all category 3 hurricanes across all counties in the study area
❷ Wetland Restoration	6 counties with the highest losses in assets where at least 25 miles of salt marsh could be restored by bay
❸ Oyster Reef Restoration	1,000 miles restored in all counties with high suitability
❹ Barrier Island Restoration	All Mississippi coastal counties
❺ Wetland Conservation	125 miles of wetlands protected
Beach Nourishment (❻ East Coast and ❾ West Coast)	All coastal counties in Florida (East Coast) and Texas (West Coast)
❼ Local Levees Priority	6ft "hills" built to protect 532,000 existing houses on the 6 counties that experience most damages
❽ Home Elevation	Elevate 481,841 existing houses by 8ft in 6 counties that experience the most damages
❿ Shoreline Levees	20ft levees constructed around Houma & New Orleans, LA - 340 miles

Schedule


2017
2018
2019
Task
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
1.a QAPP
2.a Kickoff Meeting with PEP and SIN
1.b Reprioritization of Parcels
1.b Meeting with PEP and SIN, and Stakeholder Meeting
1.c GIS Analysis
2.a Workshop Meeting with PEP and SIN
2.b Vulnerability/Risk Assessment
2.a Stakeholder Meeting
1.d Draft Final Report: CCMP/CLPS
2.c Draft Final Report: PEP/SIN
2.a Stakeholder Meeting
1.d Final Report: PEP
2.c Final Report: SIN
Task Period
Meeting(s)