AECOM
9 Jonathan Bourne Drive
Pocasset, MA 02559
www.aecom.com

508.833.6950 tel
508.833.6951 fax

Memorandum

To	George Meservey, Director of Planning & Community Development Michael Domenica, PE, Program Manager
CC	Betsy Shreve, AICP, AECOM Project Director Sia Karplus, Science Wares, Inc. Anamarija Frankić, PhD, University of Massachusetts Boston, Green Harbors Project Mark Begley, MT Environmental Restoration Paula Winchell, AECOM
Subject	**Town of Orleans, MA** **Water Quality and Wastewater Planning** **Task Number 3.3 – NT Demonstration Projects** **Technical Memorandum on Outline for Site Characterization and Evaluation for Aquaculture/Shellfish Propagation (evaluation criteria and ranking)**
Project Number	TBD
From	Thomas Parece, P.E., AECOM Project Manager
Date	11/03/15

1. Background

a. Purpose of Site Characterization and Evaluation Technical Memorandum (1 paragraph).

2. Introduction

a. Section 1 Introduction

(1) Describe Consensus Plan (1 paragraph). Appendix to include Consensus Plan documentation.

(2) Definitions (Define the site suitability parameters; Define Aquaculture and Coastal Habitat Restoration).

a) Coastal Habitat Restoration may include oyster reefs, mussel areas and bottom planting of hard clams.

b) Clarify difference between establishing oyster reefs as no take areas (sanctuaries) and areas open for harvest (commercial and recreational).

(3) Provide overview of process of site identification by Town and Stakeholders and subsequent characterization and evaluation based on criteria agreed upon by Team and the Town.

b. Section 2 Site Identification

(1) Describe site identification criteria (we would be reporting the criteria that were used by Town and stakeholders to identify the sites proposed in consensus planning).

(2) Identify sites that were reported in Consensus Plan and are being reviewed in greater detail as part of this next phase of work as follows:

- Town Cove (both aquaculture and CHR);
- Little Pleasant Bay (both aquaculture and CHR);
- Mill Pond ((both aquaculture and CHR);
- Arey's Pond (aquaculture);
- Pochet (CHR); and
- Lower River (CHR).

3. Description of Proposed Sites

a. Introduce and define the parameters that will be described for each site:

- Water quality data, including salinity, dissolved oxygen, Chlorophyll a, total nitrogen (TN), dissolved organic nitrogen (DON), particulate organic matter (POM), pH, and temperature;
- Tide and water flow (circulation) data;
- Bathymetry;
- Benthic Conditions (type of sediment and benthic infauna assessments from MEP);
- Local knowledge of shellfish species and shell fishing at these sites;
- Type and location of current uses (ie. boating, swimming, other);
- Abutter interests/potential conflicts;
- Acreage available within water bodies;
- Access points/easement requirements;
- Land ownership; and
- Viability of using existing shellfish grants as a demonstration.

b. Provide a synopsis of existing conditions for each of the above parameters for each of the six sites (Excel table summarizing data for each site, available maps, and 1 paragraph explanation for each site).

c. List additional information that would be useful to site evaluations, and identify additional data needs as appropriate.

4. Enumerate Site Evaluation and Screening Criteria

a. Identify and define site evaluation and screening criteria for a Shellfish Demonstration Project location, such as:

(1) Site Suitability

- Abutter Compatibility
- Available Growing Area/Adequacy of Acreage
- Water Quality Indicators
- Disease/Predation
- Ease of Access
- Aesthetic Impacts
- Representativeness of the Site (Transferability)
- Use Conflicts
- Ability to Co-Locate with other Non-Traditional Technologies

(2) Permitting

- Wild Harvest Conflicts (DMF)
- Grow-Out to 3-inch Allowed (DMF)
- Permittability (alteration of resource areas, etc.)

(3) Project Evaluation

- Expected Survival
- Overall Likelihood of Monitoring Plan to Yield Quantified Results

(4) Other/Overriding Considerations

b. Create a site evaluation matrix for both aquaculture and coastal habitat restoration (oyster reef, mussel and/or hard clam planting) (ie. Excel table presenting matrix, and 1 paragraph explanation).

5. Analysis: Evaluate and Rate Each Site based on Criteria

a. Apply evaluation criteria to six sites. In applying each of the criteria to each of the sites, use a consistent three level rating system as follows:

(1) Good = 1 point

(2) Neutral = 0 points

(3) Poor = -1 point

b. Assign an overall rating to each site based on evaluation findings and rank sites.

c. Assign weights to the individual criteria based on consensus with the Team and Town and re-rate the sites evaluated in Task 5.a based on the weightings. The sites can then be ranked to reflect weighted criteria.

d. Present results of each site ranking (weighted and un-weighted).

6. Findings/Recommendations: Summarize Site Selection Matrix/Site Screening Results

a. Prepare a prioritized list of sites for both aquaculture and coastal habitat restoration methods of growing shellfish (Table with ranking and 2 paragraph description of findings and recommendations). Discuss the implications of the weighting on the list of sites.