DEPARTMENT OF ENVIRONMENTAL PROTECTION
WATERWAYS REGULATION PROGRAM

Notice of License Application Pursuant to M. G. L. Chapter 91
Waterways License Application Number W13-3807
Towns of Chilmark and West Tisbury

NOTIFICATION DATE: March 21, 2013

Public notice is hereby given of the waterways application by the Town of Chilmark and W. Tisbury to implement a small scale oyster restoration that will be self-sustaining and provide ecological and socio-economic benefits at Town Cove at the outlet of Mell Brook, in the municipality of Tisbury, in and over the waters of Tisbury Great Pond. The proposed project has been determined to be water-dependent.

The Department will consider all written comments on this Waterways application received by within 30 days subsequent to the "Notification Date". Failure of any aggrieved person or group of ten citizens or more, with at least five of the 10 residents residing in the municipality(s) in which the license or permitted activity is located, to submit written comments to the Waterways Regulation Program by the Public Comments Deadline will result in the waiver of any right to an adjudicatory hearing in accordance with 310 CMR 9.13(4)(c).

Additional information regarding this application may be obtained by contacting the Waterways Regulation Program at (508) 946-2748. Project plans and documents for this application are on file with the Waterways Regulation Program for public viewing, by appointment only, at the address below.

Written comments must be addressed to: Carlos T.B. Fragata, Environmental Analyst, DEP Waterways Regulation Program, 20 Riverside Drive, Lakeville, MA 02347.

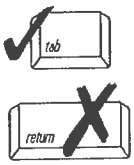
Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Waterways Regulation Program

Chapter 91 Waterways License Application - 310 CMR 9.00

Water-Dependent, Nonwater-Dependent, Amendment

X253990
Transmittal No.

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



For assistance in completing this application, please see the "Instructions".

A. Application Information (Check one)

NOTE: For Chapter 91 Simplified License application form and information see the Self Licensing Package for BRP WW06.

Name (Complete Application Sections)	Check One	Fee	Application #
WATER-DEPENDENT -			
General (A-H)	☐ Residential with ≤ 4 units	$175.00	BRP WW01a
	☒ Other	$270.00	BRP WW01b
	☐ Extended Term	$2730.00	BRP WW01c
Amendment (A-H)	☐ Residential with ≤ 4 units	$85.00	BRP WW03a
	☐ Other	$105.00	BRP WW03b
NONWATER-DEPENDENT -			
Full (A-H)	☐ Residential with ≤ 4 units	$545.00	BRP WW15a
	☐ Other	$1635.00	BRP WW15b
	☐ Extended Term	$2730.00	BRP WW15c
Partial (A-H)	☐ Residential with ≤ 4 units	$545.00	BRP WW14a
	☐ Other	$1635.00	BRP WW14b
	☐ Extended Term	$2730.00	BRP WW14c
Municipal Harbor Plan (A-H)	☐ Residential with ≤ 4 units	$545.00	BRP WW16a
	☐ Other	$1635.00	BRP WW16b
	☐ Extended Term	$2730.00	BRP WW16c
Joint MEPA/EIR (A-H)	☐ Residential with ≤ 4 units	$545.00	BRP WW17a
	☐ Other	$1635.00	BRP WW17b
	☐ Extended Term	$2730.00	BRP WW17c
Amendment (A-H)	☐ Residential with ≤ 4 units	$435.00	BRP WW03c
	☐ Other	$815.00	BRP WW03d
	☐ Extended Term	$1090.00	BRP WW03e

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Waterways Regulation Program
Chapter 91 Waterways License Application - 310 CMR 9.00
Water-Dependent, Nonwater-Dependent, Amendment

X253990
Transmittal No.

B. Applicant Information Proposed Project/Use Information

1. Applicant:

Isaiah Scheffer
Name

isaiah.scheffer@gmail.com.
E-mail Address

PO Box 119
Mailing Address

Note: Please refer to the "Instructions"

Chilmark
City/Town

MA
State

02535
Zip Code

508-645-2100 x2145
Telephone Number

508-645-2110
Fax Number

2. Authorized Agent (if any):

Karen Lombard
Name

klombard@tnc.org
E-mail Address

The Nature Conservancy, 99 Bedford St., 5th floor
Mailing Address

Boston
City/Town

MA
State

02111
Zip Code

617-532-8356
Telephone Number

617-532-8456
Fax Number

C. Proposed Project/Use Information

1. Property Information (all information must be provided):

Commonwealth of Massachusetts
Owner Name (if different from applicant)

NA
Tax Assessor's Map and Parcel Numbers

70o39'42.64"W
Latitude

41o21'34.29" N

Tisbury Great Pond, W. Tisbury & Chilmark
Street Address and City/Town

MA
State

Zip Code

2. Registered Land ☐ Yes ☒ No

3. Name of the water body where the project site is located:

Tisbury Great Pond

4. Description of the water body in which the project site is located (check all that apply):

Type	Nature	Designation
☐ Nontidal river/stream	☐ Natural	☐ Area of Critical Environmental Concern
☐ Flowed tidelands	☐ Enlarged/dammed	☐ Designated Port Area
☐ Filled tidelands	☐ Uncertain	☐ Ocean Sanctuary
☒ Great Pond		☐ Uncertain
☐ Uncertain		

C. Proposed Project/Use Information (cont.)

Select use(s) from Project Type Table on pg. 2 of the "Instructions"

5. Proposed Use/Activity description

Restoration of 0.99 acres of native eastern oyster habitat using shell cultch and spat-on-shell seeding with remote setting techniques. The area abuts an existing native oyster bed. Our intention is to successfullly implement a small-scale oyster restoration that will be self-sustaining over time and provide ecological and socio-economic benefits. See attached project description.

6. What is the estimated total cost of proposed work (including materials & labor)?

$60,0000

7. List the name & complete mailing address of each abutter (attach additional sheets, if necessary). An abutter is defined as the owner of land that shares a common boundary with the project site, as well as the owner of land that lies within 50' across a waterbody from the project.

Name	Address
NA	

D. Project Plans

1. I have attached plans for my project in accordance with the instructions contained in (check one):

☒ Appendix A (License plan) ☐ Appendix B (Permit plan)

2. Other State and Local Approvals/Certifications

☒ 401 Water Quality Certificate	in process — Date of Issuance
☒ Wetlands	in process — File Number
☐ Jurisdictional Determination	JD- — File Number
☒ MEPA	in process AE 15008 — File Number
☐ EOEA Secretary Certificate	— Date
☐ 21E Waste Site Cleanup	— RTN Number

E. Certification

All applicants, property owners and authorized agents must sign this page. All future application correspondence may be signed by the authorized agent alone.

"I hereby make application for a permit or license to authorize the activities I have described herein. Upon my signature, I agree to allow the duly authorized representatives of the Massachusetts Department of Environmental Protection and the Massachusetts Coastal Zone Management Program to enter upon the premises of the project site at reasonable times for the purpose of inspection."

"I hereby certify that the information submitted in this application is true and accurate to the best of my knowledge."

Applicant's signature — Date: 1/29/13

Land is owned by the Commonwealth of Massachusetts
Property Owner's signature (if different than applicant) — Date

Agent's signature (if applicable) — Date: 1/29/13

E. Certification

All applicants, property owners and authorized agents must sign this page. All future application correspondence may be signed by the authorized agent alone.

"I hereby make application for a permit or license to authorize the activities I have described herein. Upon my signature, I agree to allow the duly authorized representatives of the Massachusetts Department of Environmental Protection and the Massachusetts Coastal Zone Management Program to enter upon the premises of the project site at reasonable times for the purpose of inspection."

"I hereby certify that the information submitted in this application is true and accurate to the best of my knowledge."

Raymond A. Hale
Applicant's signature

2-6-13
Date

Land is owned by the Commonwealth of Massachusetts
Property Owner's signature (if different than applicant)

Date

Agent's signature (if applicable)

2-11-13
Date

F. Waterways Dredging Addendum

1. Provide a description of the dredging project

   ☐ Maintenance Dredging (include last dredge date & permit no.) ☐ Improvement Dredging

   NA
   Purpose of Dredging

2. What is the volume (cubic yards) of material to be dredged?

   _____

3. What method will be used to dredge?

   ☐ Hydraulic ☐ Mechanical ☐ Other

4. Describe disposal method and provide disposal location (include separate disposal site location map)

   _____

   _____

5. Provide copy of grain size analysis. If grain size is compatible for beach nourishment purposes, the Department recommends that the dredged material be used as beach nourishment for public beaches. **Note:** In the event beach nourishment is proposed for private property, pursuant to 310 CMR 9.40(4)(a)1, public access easements below the existing high water mark shall be secured by applicant and submitted to the Department.

G. Municipal Zoning Certificate

Towns of Chilmark and West Tisbury (agent: The Nature Conservancy)
Name of Applicant

NA	Tisbury Great Pond	West Tisbury/Chilmark
Project street address	Waterway	

Description of use or change in use:

Shell culch will be deposited over 1 acre of pond bottom in order to extend oyster habitat in Tisbury Great Pond.

To be completed by municipal clerk or appropriate municipal official:

"I hereby certify that the project described above and more fully detailed in the applicant's waterways license application and plans is not in violation of local zoning ordinances and bylaws."

ERNEST P. MENDENHALL — Printed Name of Municipal Official

1/15/13 — Date

Signature of Municipal Official — Inspector of Building — West Tisbury — Title — City/Town

G. Municipal Zoning Certificate

Towns of Chilmark and West Tisbury (agent: The Nature Conservancy)
Name of Applicant

NA	Tisbury Great Pond	West Tisbury/Chilmark
Project street address	Waterway	

Description of use or change in use:

Shell culch will be deposited over .99 acre of pond bottom in order to extend oyster habitat in Tisbury Great Pond.

To be completed by municipal clerk or appropriate municipal official:

"I hereby certify that the project described above and more fully detailed in the applicant's waterways license application and plans is not in violation of local zoning ordinances and bylaws."

LEONARD JASON JR	23 JAN 13
Printed Name of Municipal Official	Date

Leonard Jason Jr	INSPECTOR OF BLDGS.	CHILMARK
Signature of Municipal Official	Title	City/Town

H. Municipal Planning Board Notification

Notice to Applicant:

Section H should be completed and submitted along with the original application material.

Towns of Chilmark and West Tisbury (agent: The Nature Conservancy)
Name of Applicant

NA
Project street address

Tisbury Great Pond
Waterway

West Tisbury & Chilmark

Description of use or change in use:

Shell culch will be deposited over 1 acre of pond bottom in order to extend oyster habitat in Tisbury Great Pond

To be completed by municipal clerk or appropriate municipal official:

"I hereby certify that the project described above and more fully detailed in the applicant's waterways license application and plans have been submitted by the applicant to the municipal planning board."

Tara J. Whiting
Printed Name of Municipal Official

January 15, 2013
Date

Tara Whiting
Signature of Municipal Official

Town Clerk
Title

West Tisbury
City/Town

Note: Any comments, including but not limited to written comments, by the general public, applicant, municipality, and/or an interested party submitted after the close of the public comment period pertaining to this Application shall not be considered, and shall not constitute a basis for standing in any further appeal pursuant to 310 CMR 9.13(4) and/or 310 CMR 9.17.

H. Municipal Planning Board Notification

Notice to Applicant:

Section H should be completed and submitted along with the original application material.

Towns of Chilmark and West Tisbury (agent: The Nature Conservancy)
Name of Applicant

NA
Project street address

Tisbury Great Pond
Waterway

West Tisbury & Chilmark

Description of use or change in use:

Shell culch will be deposited over 1 acre of pond bottom in order to extend oyster habitat in Tisbury Great Pond

To be completed by municipal clerk or appropriate municipal official:

"I hereby certify that the project described above and more fully detailed in the applicant's waterways license application and plans have been submitted by the applicant to the municipal planning board."

JENNIFER L. CHRISTY
Printed Name of Municipal Official

JANUARY 23, 2013
Date

Signature of Municipal Official

TOWN CLERK
Title

CHILMARK
City/Town

Note: Any comments, including but not limited to written comments, by the general public, applicant, municipality, and/or an interested party submitted after the close of the public comment period pertaining to this Application shall not be considered, and shall not constitute a basis for standing in any further appeal pursuant to 310 CMR 9.13(4) and/or 310 CMR 9.17.

Appendix A: License Plan Checklist

General View

- [x] PE or RLS, as deemed appropriate by the Department, stamped and signed, in ink, each sheet within 8 1/2 inch by 11 inch border
- [x] Format and dimensions conform to "Sample Plan" (attached)
- [x] Minimum letter size is 1/8 of an inch if freehand lettering, 1/10 of an inch if letter guides are used
- [x] Sheet number with total number in set on each sheet
- [x] Title sheet contains the following in lower left: Plans accompanying Petition of [Applicant's name, structures and/or fill or change in use, waterway and municipality]
- [x] North arrow
- [x] Scale is suitable to clearly show proposed structures and enough of shoreline, existing structures and roadways to define its exact location
- [x] Scale is stated & shown by graphic bar scale on each sheet
- [x] Initial plans may be printed on bond; final plans due before License issuance must be on 3mil Mylar.

Structures and Fill

- [x] All Structures and Fill shown in full BLACK lines, clearly labeling which portions are existing, which are Proposed and indicating Existing Waterways Licenses
- NA ☐ *Cross Section Views* show MHW* and MLW* and structure finish elevations
- [x] *Dredge or Fill*, actual cubic yardage must be stated and typical cross sections shown
- [x] All Structures and Fill shown in full BLACK lines, clearly labeling which portions are existing, which are Proposed and indicating Existing Waterways Licenses
- NA ☐ *Cross Section Views* show MHW* and MLW* and structure finish elevations
- [x] *Dredge or Fill*, actual cubic yardage must be stated and typical cross sections shown
- [x] Actual dimensions of structures(s) and or fill and the distance which they extend beyond MHW* or OHW*
- NA ☐ Change in Use of any structures on site must be stated

* See 310 CMR 9.02, Waterways Regulations definitions of High Water Mark, Historic High Water Mark, Historic Low Water Mark, and Low Water Mark. *Note:* DEP may, at its discretion, accept appropriately scaled preliminary plans in lieu of the plans described above. In general, DEP will accept preliminary plans only for non-water dependent projects and projects covered by MEPA to address site design components such as visual access, landscaping & site coverage. *Anyone wishing to submit preliminary plans must obtain prior approval of the DEP Waterways Program* before submitting them with their application.

Appendix A: License Plan Checklist (cont.)

Boundaries

- ☐ Property lines, full black lines, ————, along with abutters' names and addresses
- ☒ Mean High Water (MHW)* or Ordinary High Water (OHW)*, full black line ————
- ☐ Mean Low Water (MLW)*, black dotted line, (.....)
- ☐ Historic MHW* or OHW* (— — — —)
- ☐ Historic MLW* (..._..._..._)
- ☐ State Harbor Lines, black dot-dash line (– . – . – . –) with indication of Chapter & Act establishing them (Ch. , Acts of)
- ☒ Reference datum is National Geodetic Vertical Datum (NGVD) or (NAVD).
- ☐ Floodplain Boundaries according to most recent FEMA maps
- ☐ Proposed & Existing Easements described in metes & bounds

Water-Dependent Structures

- ☒ Distance from adjacent piers, ramps or floats (minimum distance of 25' from property line, where feasible)
- ☒ Distance from nearest opposite shoreline
- ☐ Distance from outside edge of any Navigable Channel
- ☐ Access stairs at MHW for lateral public passage, or 5 feet of clearance under structure at MHW.

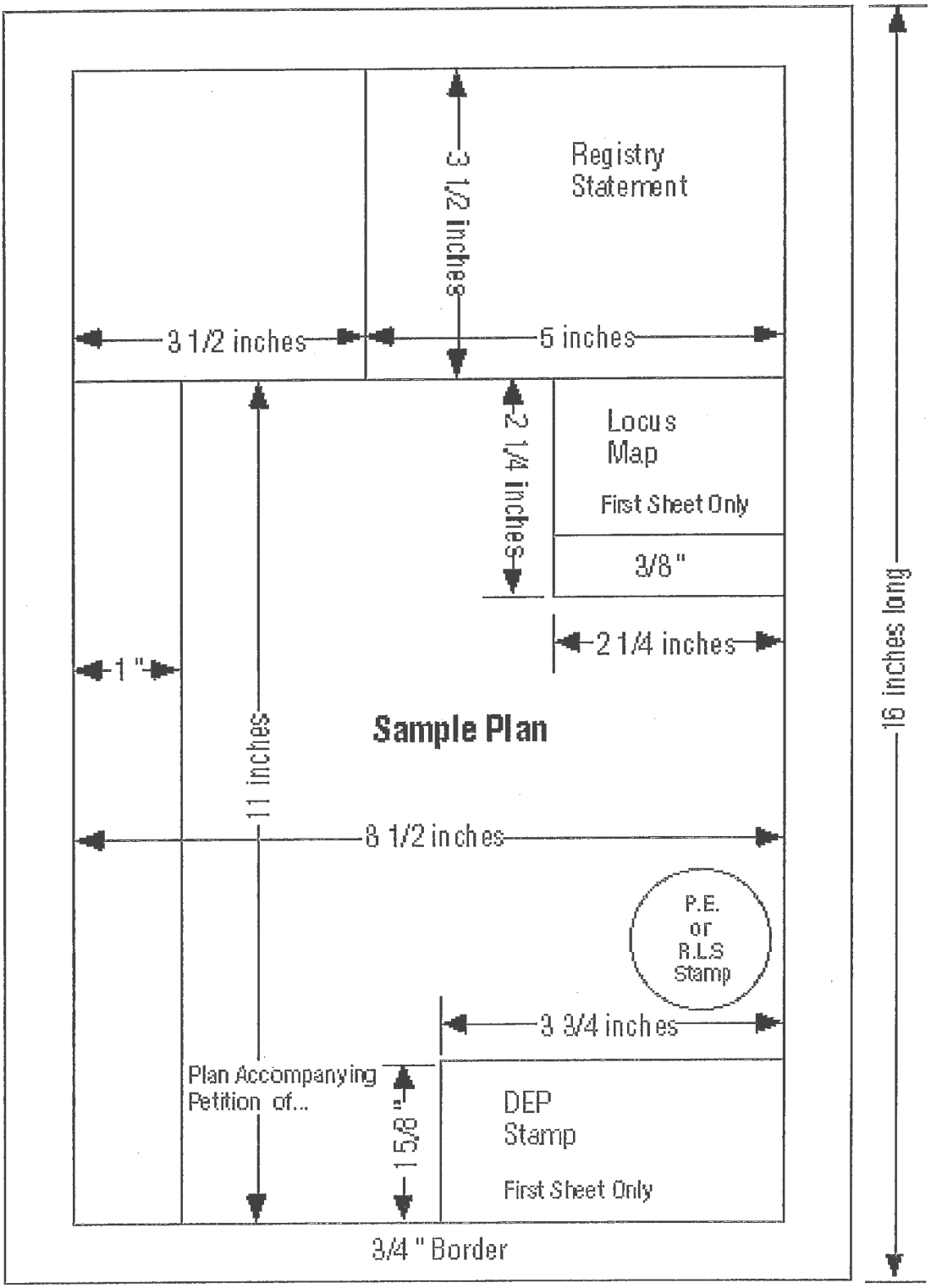
Non Water-Dependent Structures

- ☐ Depict extent of "Water-dependent Use Zone".

See Waterways Regulations at 310 CMR 9.51-9.53 for additional standards for non water-dependent use projects.

Note: Final Mylar project site plans will be required upon notice from the Department, prior to issuance of the Chapter 91 Waterways License.

Appendix A: License Plan Checklist Cont.



Appendix B: Dredging Permit Plan Checklist

For projects applying for dredging permits only, enclose drawings with the General Waterways Application that include the following information:

General View N/A

- ☐ Submit one original of all drawings. Submit the fewest number of sheets necessary to adequately illustrate the project on 8-1/2 inch X 11 inch paper.
- ☐ A 1-inch margin should be left at the top edge of each drawing for purposes of reproduction and binding. A 1/2 inch margin is required in the three other edges.
- ☐ A complete title block on each drawing submitted should identify the project and contain: the name of the waterway; name of the applicant; number of the sheet and total number of sheets in the set; and the date the drawing was prepared.
- ☐ Use only dot shading, hatching, and dashed or dotted line to show or indicate particular features of the site on the drawings.
- ☐ If deemed appropriate by the Department, certification by the Registered Professional Engineer or Land Surveyor is included.

Plan View

- ☐ North Arrow
- ☐ Locus Map
- ☐ Standard engineering scale.
- ☐ Distances from channel lines and structures if appropriate.
- ☐ Mean high water and mean low water shorelines (see definitions of "High Water Mark" and "Low Water Mark" at 310 CMR 9.02, C. 91 Regulations).
- ☐ Dimensions of area proposed to be dredged or excavated.
- ☐ Notation or indication of disposal site.
- ☐ Volume of proposed dredging or excavation.
- ☐ Ordinary high water, proposed drawdown level, and natural (historic) high water (for projects lowering waters of Great Ponds).

Section Views

- ☐ Existing bottom and bank profiles.
- ☐ Vertical and/or horizontal scales.
- ☐ Proposed and existing depths relative to an indicated datum.
- ☐ Elevation and details of control structure (for projects lowering waters of Great Ponds).

Appendix C: Application Completeness Checklist

Please answer all questions in the General Waterways Application form. If a question does not apply to your project write "not applicable" (n/a) in that block. Please print or type all information provided on the form. Use black ink (blue ink or pencil are not easily reproducible, therefore, neither will be accepted). If additional space is needed, attach extra 8-1/2" x 11" sheets of paper.

☒ **Proper Public Purpose:** For nonwater-dependent projects, a statement must be included that explains how the project serves a proper public purpose that provides greater benefit than detriment to public rights in tidelands or great ponds and the manner in which the project meets the applicable standards. If the project is a nonwater-dependent project located in the coastal zone, the statement should explain how the project complies with the standard governing consistency of the policies of the Massachusetts Coastal Zone Management Program, according to 310 CMR 9.54. If the project is located in an area covered by a Municipal Harbor Plan, the statement should describe how the project conforms to any applicable provisions of such plan pursuant to 310 CMR 9.34(2).

☒ **Plans:** Prepared in accordance with the applicable instructions contained in Appendix A-B of this application. For initial filing, meet the requirements of 310 CMR 9.11(2)(b)(3).

☒ **Applicant Certification:** All applications must be signed by "the landowner if other than the applicant. In lieu of the landowner's signature, the applicant may provide other evidence of legal authority to submit an application for the project site." If the project is entirely on land owned by the Commonwealth (e.g. most areas below the current low water mark in tidelands and below the historic high water mark of Great Ponds), you may simply state this in lieu of the "landowner's signature".

☒ **Municipal Zoning Certification:** If required, applicants must submit a completed and signed Section E of this application by the municipal clerk or appropriate municipal official or, for the initial filing, an explanation of why the form is not included with the initial application. If the project is a public service project subject to zoning but will not require any municipal approvals, submit a certification to that effect pursuant to 310 CMR 9.34(1).

☒ **Municipal Planning Board Notification:** Applicants must submit a copy of this application to the municipal planning board for the municipality where the project is located. Submittal of the complete application to DEP must include Section H signed by the municipal clerk, or appropriate municipal official for the town where the work is to be performed, except in the case of a proposed bridge, dam, or similar structure across a river, cove, or inlet, in which case it must be certified by every municipality into which the tidewater of said river, cove, or inlet extends.

☒ **Final Order of Conditions:** A copy of one of the following three documents is required with the filing of a General Waterways Application: (1) the Final Order of Conditions (with accompanying plan) under the Wetlands Protection Act; (2) a final Determination of Applicability under that Act stating that an Order of Conditions is not required for the project; or (3) the Notice of Intent for the initial filing (if the project does not trigger review under MEPA).

☒ **Massachusetts Environmental Protection Act (MEPA):** MGL 30, subsections 61-61A and 301 CMR 11.00, submit as appropriate: a copy of the Environmental Notification Form (ENF) and a Certificate of the Secretary of Environmental Affairs thereon, or a copy of the final Environmental Impact Report (EIR) and Certificate of the Secretary stating that it adequately and properly complies with MEPA; and any subsequent Notice of Project change and any determination issued thereon in accordance with MEPA. For the initial filing, only a copy of the ENF and the Certificate of the Secretary thereon must be submitted.

Note: If the project is subject to MEPA, the Chapter 91 Public Notice must also be submitted to MEPA for publication in the "Environmental Monitor". MEPA filing deadlines are the 15th and 30th of each month.

Appendix C: Application Completeness Checklist (cont.)

☒ **Water Quality Certificate:** if applicable, pursuant to 310 CMR 9.33, is included.

☐ **Other Approvals:** as applicable pursuant to 310 CMR 9.33 or, for the initial filing, a list of such approvals which must be obtained.

Projects involving dredging:

☐ The term "dredging" means the removal of materials including, but not limited to, rocks, bottom sediments, debris, sand, refuse, plant or animal matter, in any excavating, clearing, deepening, widening or lengthening, either permanently or temporarily, of any flowed tidelands, rivers, streams, ponds or other waters of the Commonwealth. Dredging includes improvement dredging, maintenance dredging, excavating and backfilling or other dredging and subsequent refilling. Included is a completed and signed copy of Part F of the application.

Filing your Completed General Waterways Application:

☒ **For all Water-Dependent applications** – submit a completed General Waterways Application and all required documentation with a *photocopy* of both payment check and DEP's *Transmittal Form for Permit Application & Payment* to the appropriate DEP regional office (please refer to Pg. 10 of the "Instructions" for the addresses of DEP Regional Offices).

☐ **For all Non Water-Dependent applications** – submit a completed General Waterways Application and all required documentation with a *photocopy* of both payment check and DEP's *Transmittal Form for Permit Application & Payment* to DEP's Boston office.

Department of Environmental Protection
Waterways Regulation Program
One Winter Street
Boston, MA 02108

☒ **Application Fee Payment for ALL Waterways Applications:** Send the appropriate Application fee* (please refer to Page 1 of the "Application"), in the form of a check or money order, along with DEP's *Transmittal Form for Permit Application & Payment*:

Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211

* Under extreme circumstances, DEP grants extended time periods for payment of license and permit application fees. If you qualify, check the box entitles "Hardship Request" on the *Transmittal Form for Permit Application & Payment.* See 310 CMR 4.04(3)(c) to identify procedures for making a hardship request. Send hardship request and supporting documentation to the above address.

NOTE: You may be subject to a ***double*** **application fee** if your application for Chapter 91 authorization results from an enforcement action by the Department or another agency of the Commonwealth or its subdivisions, or if your application seeks authorization for an existing unauthorized structure or use.

The Nature Conservancy
Protecting nature. Preserving life.

Martha's Vineyard Shellfish Group, Inc.

Project Name **Tisbury Great Pond Oyster Habitat Restoration**

Project Abstract Restoration of almost 1 acre of native eastern oyster habitat using shell cultch and spat-on-shell seeding with remote setting techniques. The area abuts an existing native oyster bed and the two towns with jurisdiction are intending to put the restored bed into spawner area status using an authorized management closure. Our intention is to successfully implement a small-scale oyster bed restoration that will be self-sustaining over time, provide ecological and socio-economic benefits, and offer a template for similar projects within the Commonwealth of Massachusetts.

PROJECT DESCRIPTION

Tisbury Great Pond, in the Towns of West Tisbury and Chilmark, is the proposed site for native eastern oyster (*Crassostrea virginica*) bed restoration efforts. This 736-acre pond is a natural coastal pond (the pond is breached strategically to manage water level, nutrients and salinity for optimal shellfish growing) and part of a dynamic barrier beach system that breaches naturally in large storm events. The pond currently supports shellfish populations of oysters and softshell clams, and provides habitat for a historic alewife fish run that at one time provided commercial landings. The proposed work will provide the necessary hard substrate and spawning stock to expand the wild oyster population towards self-sustaining and resilient levels within the pond.

Location

The area of focus for restoration work is in the northwest corner of the pond, known as Town Cove (West Tisbury and Chilmark, MA: 41°21'34.29"N, 70°39'42.64"W), adjacent to an existing wild oyster population (Figure 1). After field visits to identify the exact siting location with the municipal shellfish constables from both towns, a .99 acre square site location has been selected that lies equally within each town's waters. This site was selected based on the ecological requirements of oysters, it meets state water quality requirements for propagating shellfish, the location avoids conflict with fishing grounds in the pond, and municipal constables can readily enforce management of the area.

PROJECT WORK PLAN ***Start and End Dates:*** 06/30/2012 to 12/31/2014

The overall goal of the project is to enhance native oyster populations by addition natural hard substrate and remote-set seed as the foundation for a wild oyster bed. We know from recent research that functional oyster beds provide ecosystem services– filtration capacity, nutrient removal, and fish habitat— and therefore offer significant economic valuation (Gabowski et al. 2012) (Appendix A). The primary restoration method will be shell-planting (placement of mollusk shell material onto the bottom), which has been shown to be effective in many locations (Brumbaugh et al. 2006). We propose using primarily surf clam (*Spisula solidissima)* acquired from a shellfish distributor located in Wareham, MA, as well as some mix of oyster and clam shells recovered locally through an existing recycling program operated by Martha's Vineyard restaurants (see partners section for additional information).

The project will use approximately 60 yd^3 of primarily surf clam shell to create a .99 acre oyster bed. The seasoned shell will be transported from Wareham to a municipal staging area that has been used in past years for cultch deployment in West Tisbury, on Martha's Vineyard; it will then be loaded from the staging area into fish totes and onto a small barge for transport to the restoration site in Great Tisbury Pond. Fish totes will be emptied by hand as the barge moves along in a grid pattern to create a mosaic of about 60 1-yd^3 shell-covered areas, with each area roughly a circle about 20 feet

in diameter (Figure 2). All shell sources will meet the Massachusetts Division of Marine Fisheries requirements to prevent disease and pathogen transfer to the restoration site. Both towns have decades of experience with setting cultch in a similar manner for fishery enhancement work in the pond, and the towns will coordinate local volunteers to place the shell for this project.

While *Spisula* is generally considered inferior to oyster shell as settlement substrate, studies have shown it to be a practical alternative (Nestlerode et al. 2007, Konisky et al. 2010). The Nature Conservancy and University of New Hampshire have piloted shell-planting in the Northeast, using primarily clamshell, and demonstrated that the substrate was capable of attracting and retaining oyster larvae. About 3 months after planting shell, NH sampling showed live spat density as high as 96 spat/m^2 with an overall average density of 31 spat/m^2 (Konisky et al. 2010). We have found that using a single layer of clamshell (10cm or ~4 inches) as base, placed over firm bottom below mean low tide and in proximity to existing native populations, was most effective. Since this approach will make harvesting from the shore difficult, it will assist the towns with enforcing management of the area. The placement of the shell will be in 1 yd^3 piles that will result in on the bottom piles that are 20 ft feet in diameter. Based on prior shell placement work, it is estimated this will result in a vertical height of 10 cm (roughly 4 inches) at the center point and tapering off on the edges (Figure 2). This type of deployment is intended to create a mosaic of vertical profiles from the shell piles over the .99 acres site location, with areas of bottom that will remain devoid of placed shell, which will allow for a more nature-like shellfish bed restoration.

UNH research has indicated that small clusters of young oysters can greatly enhance natural recruitment, with some exceeding 5 years and thus living to spawn several times. To supplement the restored oyster bed, about 250 ,000 spat-on-shell (each <10mm in size) will be produced using remote setting techniques at the Martha's Vineyard Shellfish Group (MVSG) facility in Oaks Bluff, and moved out onto the beds in small clusters (1 cubic yard). The MVSG is a non-profit consortium that includes membership from the municipalities on Martha's Vineyard. This spat-on-shell work will be overseen by Rick Karney, shellfish biologist and facility director. MVSG has significant experience with remote set of oyster spat on shell for purposes of enhancing municipal shellfish resources for long-term management. In late spring, larvae are set on recycled oyster shell in mesh bags in the Oak Bluffs facility, then transported to Tisbury Great Pond for grow-out in the pond before being placed on the restored bed in order to minimize predation of the newly set spat. The spat-on-shell will be left in the pond to grow out for 30 days; however, some may be set on the bed at 15 days to experimentally compare rates of predation.

Phase I work will include project planning, completion of project permits, baseline data collection and monitoring. Phase II work will include placement of shell cultch, raising the spat-on-shell in the hatchery and placement on the restoration site, and subsequent post-restoration monitoring to determine survival and productivity. To improve remote set oyster survival, we will hold the spat on shell in the pond until early summer 2013 before emptying the bags of spat-on-shell over the restoration cultch bed. The exact time of year for spat-on-shell deployment will be determined by water temperatures in the pond, which is typically the end of June (water temps above 20 ° C).

Tasks and Timeline for Anticipated Actions

Task 1—Project planning and permitting by TNC staff and partners (Sept 1, 2012 – June 1, 2013)
Task 2—Collect baseline data and monitor bottom for pre-work conditions at site (April 1-April 30, 2013)
Task 3— Hatchery grown spat on shell (Feb 1 – May 15, 2013)
Task 4—Place spat on shell bags for grow out in pond (June 1 – July 15, 2013)
Task 5—Clam shell cultch deployment and placement of spat on shell on site (July 1 – July 15, 2013)
Task 6—Year 1 site monitoring (Aug-Oct 2013)
Task 7 –Consolidate monitoring results and develop final reports (Nov – Dec 31, 2013)
Task 8—Continue year 2 monitoring (June-Oct 2014)

	2012							2013											2014										
	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O
Task 1	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Task 2											X	.																	
Task 3									X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Task 4													X	.	.	.	.												
Task 5													X	.	.														
Task 6																X	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Task 7																			X	.	.	.	.	.					
Task 8																												X	.	.

Measurable Objectives (short-term)

For this project, measures will be made with these specific objective targets: 1) 0.99 acres of shell-planting area adequately covered in a mosaic of shell reef areas, 2) average density of >20 spat/m^2 in first-year of settlement from natural recruitment, 3) deployment of 250,000 spat-on-shell for seeding, and 4) expanded mollusk shell recycling and community outreach for this project and others on Martha's Vineyard. These short term objectives are all aimed at the continued success and scaling-up of our restoration efforts so we can move ahead with longer-term goals within the Commonwealth of Massachusetts.

Goals (long-term)

The Nature Conservancy's long-term goal is to restore ecosystem services lost to Massachusetts estuaries as historic oyster beds have been destroyed by disease, harvest, or poor water quality. We are developing, implementing, and documenting methods that will be directly transferrable to large-scale recovery of oyster habitat and associated ecosystem services through a combination of bed construction and municipal/community engagement. Measures of long-term success will be the establishment of a network of sustainable oyster spawner areas (1-2 acres each with average density of at least 50 oysters/m^2) that enhance oyster recruitment in priority salt ponds, embayments and estuaries. Equally important, we envision a highly-engaged municipal and community stakeholders who are educated about the benefits of oyster restoration and active in the restoration process. We intend to leverage this project and energize shellfish restoration partners (municipal, state, NGO) to help secure additional local, state, federal and private funding for sustainable oyster restoration progress over time.

Monitoring Components

The monitoring and restoration plan is detailed in Appendix B of this proposal. Monitoring will include structural and functional objectives. The structural objective includes measurements of shell bed thickness (mm) and bottom coverage extent (acres). The functional objective will measure the settlement of live oyster spat, including the spat settlement density (# of live oysters) and the oyster spat growth (mm). The structural component of the restoration will be measured after bed construction between August and October 2013. Monitoring to measure the functional density and growth of live oysters will occur using random sampling methods with quadrats in October 2013.

Impacts on Other Resources

The site is located within Priority Habitat (PH 15) and Estimated Habitat (EH79) as indicated in the Massachusetts Natural Heritage Atlas (13th Edition). The MA Natural Heritage and Endangered Species program database indicates that four state-listed rare species have been found in the vicinity of the site: *Hydrocotyle verticillata* (saltpond pennywort, threatened), *Sterna dougallii* (Roseate Tern, Endangered), *Sternula antillarum* (Least Tern, Special Concern), and *Sterna hirundo* (Common Tern, Special Concern). This project is not likely to impact any of these species as the plant is found on pond shores only and the birds do not use habitat on the floor of the pond. The project may actually improve feeding opportunities for the birds in the long term as oyster beds are known to provide habitat for fish populations. In addition, Tisbury Great Pond has supported a river herring (Alewife) run when the pond is open to the ocean during the appropriate time of year. Freshwater input from two feeder streams maintains salinity levels in the upper portion of the

pond that are conducive to spawning and survival. It is not expected that this project will impact this fish run. There are no eelgrass populations in this pond.

Land Ownership

The proposed oyster restoration location is on state-owned tidelands, known as "Commonwealth Tidelands," as is most of the submerged coastal land within three miles of the Massachusetts coast. In Massachusetts, the tidelands between mean high water (MHW) and mean low water (MLW) marks are typically owned by the abutting upland landowner unless specific provisions are made otherwise. We plan to deploy all the shellfish bed restoration associated with this project below the MLW mark, so all work will be on bottom land that is under state jurisdiction. Additionally, in Massachusetts each coastal municipality has autonomy to manage the shellfish resources located in municipal waters with local oversight and management provided they comply with annual permitting and reporting requirements to the state Division of Marine Fisheries. This municipal authority also includes decisions regarding commercial and recreational shellfish harvest levels.

The upper portion of the Town Cove (abutting the proposed project location) is closed to shellfish harvesting resulting from high fecal coliform levels per DMF regulation. However, the proposed restoration area is located in waters approved for shellfish harvest, indicating that year-round fecal coliform levels are below the threshold considered a threat to public safety. In an effort to be as risk averse as possible regarding public health concerns, and to fully meet the DMF permitting requirements, all work for this project will be undertaken in approved waters as designated by the DMF. TNC has consulted with DMF to ensure that the proposed project meets all requirements for shellfish restoration work.

Partners and Community Engagement

The TNC-led Project Team consists of the following individuals:

Jon Kachmar, Southeast MA Program Director
Casey Shetterly, Southeast MA Project Manager
Matt Pelikan, Restoration Ecologist (MA Chapter)
Karen Lombard, Director of Stewardship and Restoration (MA Chapter)
Ray Konisky, New Hampshire Marine/Coastal Director

This proposal is a partnership with TNC Massachusetts Chapter, the Martha's Vineyard Shellfish Group (MVSG), the Towns of West Tisbury and Chilmark, and the MV Shell Recovery Partnership. Each organization is committed to sustainable and resilient shellfish populations in Tisbury Great Pond. For this project, TNC has secured private funds to advance these ecological needs for Massachusetts waters.

TNC includes local, regional, national, and international capacity and expertise in marine conservation work. Our Massachusetts Chapter staff (based in Boston, Plymouth, and Martha's Vineyard) will work in concert with regional and Global Marine Team shellfish biologists who have considerable expertise with oyster restoration projects elsewhere in the US.

Both the **Towns of West Tisbury and Chilmark** (represented by the respective Shellfish Commission members) are committed to long-term sustainable fisheries management in Tisbury Great Pond.

MVSG is a non-profit consortium of municipal shellfish departments on Martha's Vineyard. For over thirty years this organization has "sought to preserve and expand the Island's traditional shellfisheries" under the leadership of Rick Karney (Director) and a staff that manages the shellfish hatchery. The hatchery has significant experience raising multiple species of shellfish for municipal enhancement programs, including remote set of oyster spat on shell.

Jessica Kanozak is the lead for the **MV Shell Recovery Partnership**, which started up in 2010. Clam and oyster shells from the half-shell market are collected at several restaurants and venues on Martha's Vineyard. We intend to leverage this local effort by providing additional resources for increased recycling of on-island shell. Currently the shell is piled in an upland location for 12 months before deployment into local waters for habitat enhancement work, and this source will

contribute at least 90% of recycled shell for cultch at the proposed for Great Tisbury Pond restoration. Since startup the Partnership has recycled 3 tons of shell.

Permitting and Regulatory Requirements

To date there has been only one permitted native shellfish bed restoration project in Massachusetts waters. This work was undertaken in Wellfleet Harbor jointly by TNC and Massachusetts Audubon Society, using various methods of substrate for testing effectiveness, and resulted in between 60,000 and 250,000 oysters surviving as of early 2012. This project required significant time for permitting since existing laws and regulations did not account for the type of beneficial restoration activities associated with native shellfish bed work. In conjunction with the Wellfleet project and State-sponsored regulatory streamlining efforts, TNC staff provided significant input to state agencies as to how restoration activities could most efficiently be regulated.

The Towns of West Tisbury (where the project is located) and Chilmark will be the applicants submitting required permits for the proposed .99 acre oyster bed restoration. The following lists each of the local, state, and federal permits required and the path to obtaining them in Massachusetts.

LOCAL PERMITS

Massachusetts statutory authority lies with municipalities to manage shellfish resources in their respective waters. This is done in conjunction with an annual permit to the state of MA Division of Marine Fisheries (DMF). Since the Town is the applicant to undertake restoration in municipally managed waters, approval for the proposed work will come from the Town's ongoing propagation permit from DMF. *See the state permit section below.*

STATE PERMITS

There are two components for obtaining state permits for shellfish restoration in Massachusetts. Both the MA Division of Marine Fisheries (DMF) and MA Department of Environmental Protection (DEP) have joint responsibilities for shellfish and associated substrate placed for habitat restoration purposes.

DMF requires a permit for placing shellfish in state waters per the Shellfish Planting Guidelines document (DMF, 2011). The guidelines consider restoration planting to be shellfish propagation, and a Special Project permit is required if an entity other than a municipality applies. If a municipality is the project proponent the permit can be obtained through the municipalities' annual propagation permit with DMF. In this case, the Town of West Tisbury will apply for a permit from DMF for the cultch placement and spat-on-shell seeding work, with technical assistance from TNC for preparing permit applications.

The second component of the state permitting required is managed by the MA DEP and MA Environmental Policy Act Office. While DEP does not regulate aquaculture projects *per se*, they have jurisdiction over the physical impact of the project. MA DEP considers the placement of cultch for restoration purposes as "fill in an orderly manner," which is considered a structure for permitting purposes. The fact that shellfish restoration is considered a fill and/or structure triggers a requirement for a Chapter 91 (The Massachusetts Public Waterfront Act) permit from DEP, which regulates structures on tidelands. The proposed work also requires section 401/MA Water Quality Certification approval, and requires review under the MA Environmental Policy Act (MEPA). It is anticipated that an individual401/Water Quality Certification will be required since the threshold is any impact to tideland bottom area 5,000 sq. ft. and greater; the proposed project is 40,000 sq. ft. It is also anticipated that a MEPA waiver will be granted since the project is proposing beneficial ecological services related to the oyster bed restoration.

FEDERAL PERMITS

The US Army Corps of Engineers' Nationwide permit includes language allowing this type of project, but the Nationwide permit is not applicable in the New England District, where Programmatic General Permits (PGP) are used instead. The Massachusetts PGP allows for the placement of cultch. There have been early 2012 permit condition changes to the MA PGP, but nothing that affects shellfish restoration work. Chapter 91 and 401 Water Quality Certification applications and plans will be submitted for Army Corps regulatory review.

Figure 1:

Project Location

Tisbury Great Pond Oyster Habitat Restoration Project

Proposed shellfish restoration area (.99 acres)

N

0 0.25 0.5 1 Miles

1: 24,000 Jan 2013

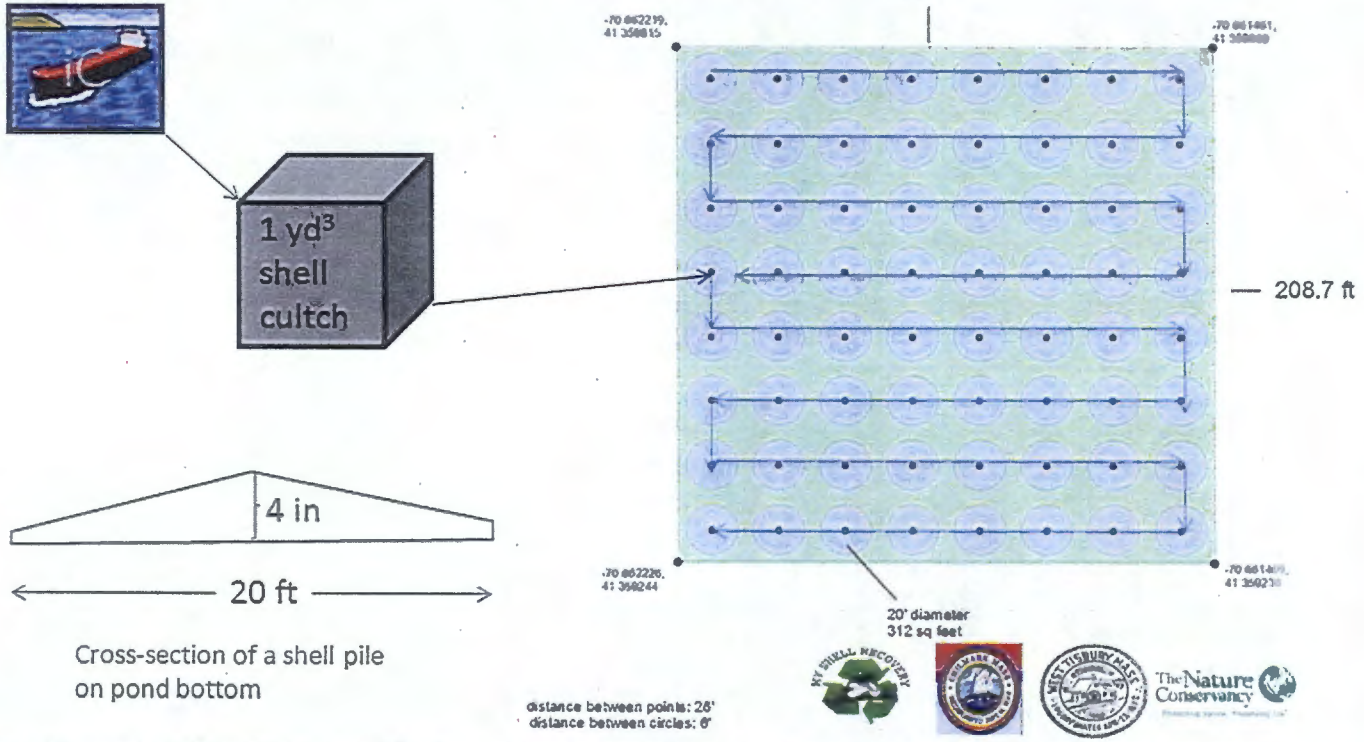
The Nature Conservancy
Protecting nature. Preserving life.

Figure 2:

Shell Placement Diagram

Proposed Shell Placement on Restoration Site in Tisbury Great Pond

Aerial View of project site (.99 acres) after shell is laid down (64 shell piles – each 1 yd³). Arrows indicate direction of deployment.



Plans Accompanying Petition of Tisbury Great Pond Oyster Habitat Restoration Project, Jan 2013; The Nature Conservancy for Towns of West Tisbury & Chilmark

Appendix A

Ecosystem Services and Economic Valuation

(from Grabowski et al. 2012)

Table 2. Ecosystem services provided by oyster reef habitat.

Ecosystem service	Ecosystem process	References	Bioeconomic model valuation method
Water quality improvement	Chlorophyll a removal	Newell et al. 2002, Grizzle et al. 2006	Replacement cost of using sewage treatment plant to remove nitrogen, nitrogen credit market
	Reduce turbidity	Newell and Koch 2004	
	Denitrification	Piehler and Smyth 2011	
	Increase benthic algal or pseudofecal production	Newell et al. 2002	Not applicable
	Bacterial biomass removal	Cressman et al. 2003	Not applicable
Seashore stabilization	Shoreline stabilization	Meyer et al. 1997	Cost of a sill to stabilize salt marsh and seagrass habitat, value of protected habitats
Carbon burial	Bury carbon dioxide	Not applicable	Traded carbon pollution credits
Habitat provisioning for mobile fish and invertebrates	Increased fish production	Peterson et al. 2003	Commercial dockside landings value, recreational fisher willingness to pay for improved fishing
Habitat for epibenthic fauna	Increased epibenthic faunal production and biodiversity	Wells 1961, Bahr and Lanier 1981, Lenihan et al. 2001	Already captured in fish values
Diversification of the landscape	Synergies among habitats	Micheli and Peterson 1999, Grabowski et al. 2005	Not applicable
Oyster production	Increased oyster production	Heral et al. 1990, Rothschild et al. 1994, Lenihan and Peterson 1998, 2004, Grabowski and Peterson 2007	Commercial oyster dockside value, recreational value-license program

Appendix B

Restoration Monitoring Plan

Project Name: ***Tisbury Great Pond Oyster Habitat Restoration***

Monitoring Contact: Matt Pelikan (The Nature Conservancy Ph. 508-693-6287, ext. 11; email: mpelikan@tnc.org)

Project Goal

We will build and seed nearly one acre of oyster bed in an area closed to harvest using low-cost surf clam shell as part of a larger scale, long-term commitment to Massachusetts waters. The project will benefit Martha's Vineyard eastern oyster populations, as well as many other invertebrate, fish, and macroalgal species associated with living shellfish beds. Further, the project will continue public participation in a valuable oyster restoration and shell recycling program. In the longer-term, the project provides a basis for addressing three critical issues for shellfish restoration in Massachusetts by 1) broadening the stakeholder base in restoration, 2) proving substrate-planting methods, and 3) enhancing oyster standing stock through recruitment at municipal spawner sites. Our overall project goal is to increase vital ecosystem services provided by oysters (i.e., filtration capacity, nutrient removal, and fish habitat) using cost-effective, community-driven, and proven restoration practices

Structural Objective: Bed will have sufficient shell cover for oyster settlement

Parameters (what will be measured and in what units):
1) Shellfish Bed Substrate Thickness (mm)
2) Shellfish Bed Extent (ac)

Technique for Measurement (optional): 0.25m^2 quadrat random samples using patent tongs or visual and/or video transect monitoring

Parameter 1: Shellfish Bed Substrate Coverage
Baseline (pre-construction or earliest available post-construction numerical value for the structural parameter):
Presence of existing shell on the bottom to be determined

Reference (ideal numerical value for the structural parameter):
More vertical relief is typically considered better to position oysters closer to food sources and further from transporting bottom sediments. Up to 10cm deep shell coverage is desired.

Target (proposed numerical value desired for the structural parameter):
Target is to match observed average shell depth with 10cm target. Per .25m^2 sample, patent tong samples should recover 0.01m^3 of shell (about 10 quarts of shell).

Timing (sampling frequency and end date): Monitoring after bed construction (between Aug-Oct 2013).

Parameter 2: Shellfish Bed Extent
Baseline (pre-construction or earliest available post-construction numerical value for the structural parameter):
Presence of existing shell on the bottom to be determined

Reference (ideal numerical value for the structural parameter):
0.99 acres of shell coverage (>75% shell)

Target (proposed numerical value desired for the structural parameter):

0.99 acres of shell coverage (>50% shell)

Timing (sampling frequency and end date): Monitoring after bed construction (between Aug-Oct 2013).

Functional Objective: Investigational reef will attract sufficient settlement of live oyster spat *

Parameters (what will be measured and in what units):
1) Oyster Spat Settlement Density (# live oysters)
2) Oyster Spat Growth (size mm)

Technique for Measurement (optional): 0.25m^2 quadrat random samples using patent tongs or quadrats

Parameter 1: Oyster Spat Settlement Density (# live oysters)
Baseline (pre-construction or earliest available post-construction numerical value for the functional parameter): Existing oyster spat to be determined

Reference (ideal numerical value for the functional parameter): 100-500 spat/m^2 (maximum observed in local beds)

Target (proposed numerical value desired for the functional parameter): 50 spat/m^2 after first year spawn event

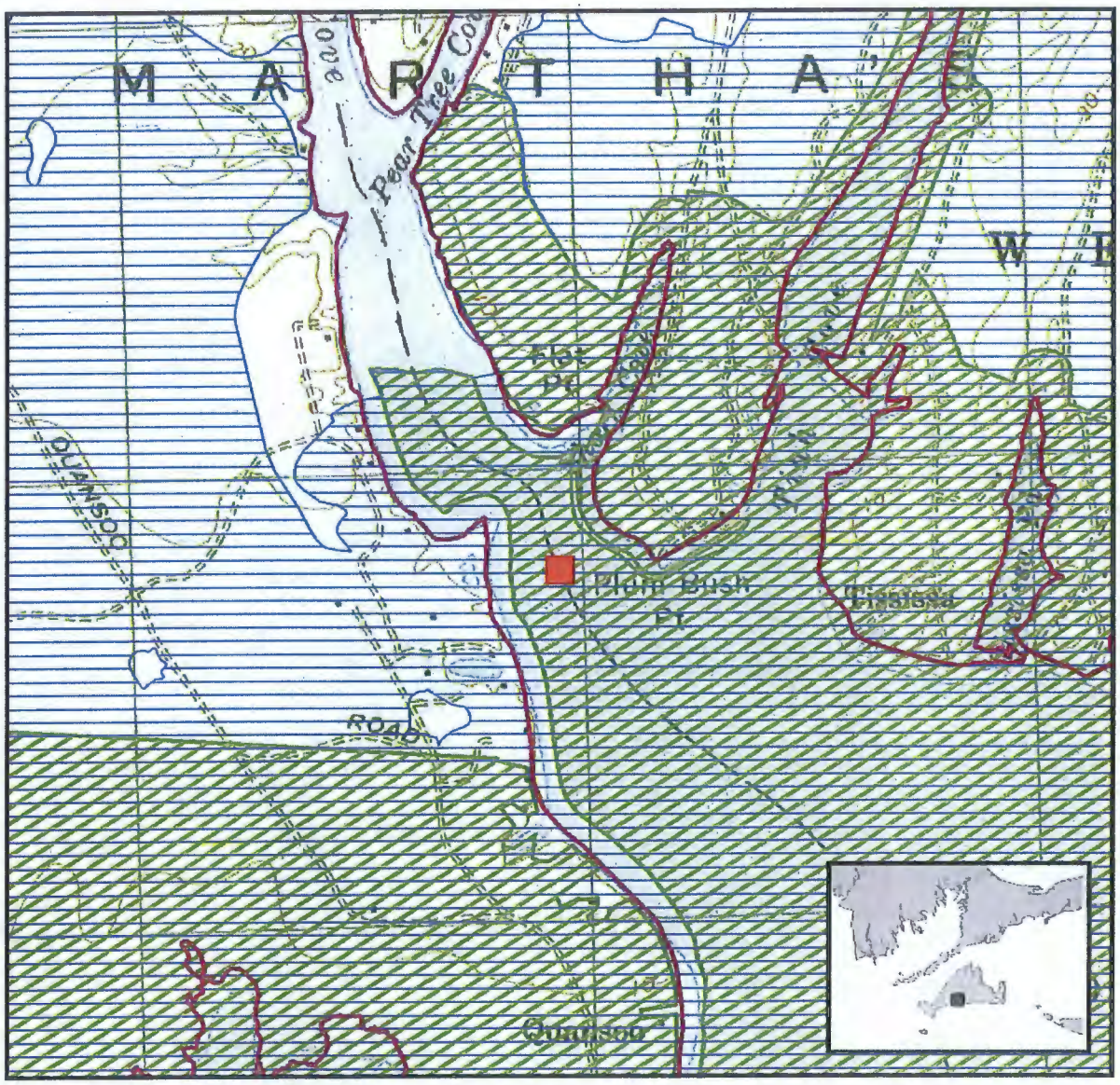
Timing (sampling frequency and end date): Transect survey in Oct 2013

Parameter 2: Oyster Spat Growth (mm)
Baseline (pre-construction or earliest available post-construction numerical value for the functional parameter): Existing oysters to be determined

Reference (ideal numerical value for the functional parameter): All oysters at > 10mm about 3 months after spawn

Target (proposed numerical value desired for the functional parameter): Average oyster size at > 10mm about 3 months after spawn

Timing (sampling frequency and end date): Transect surveys in Oct 2013



Tisbury Great Pond Oyster Habitat Restoration Project
Environmental Constraints

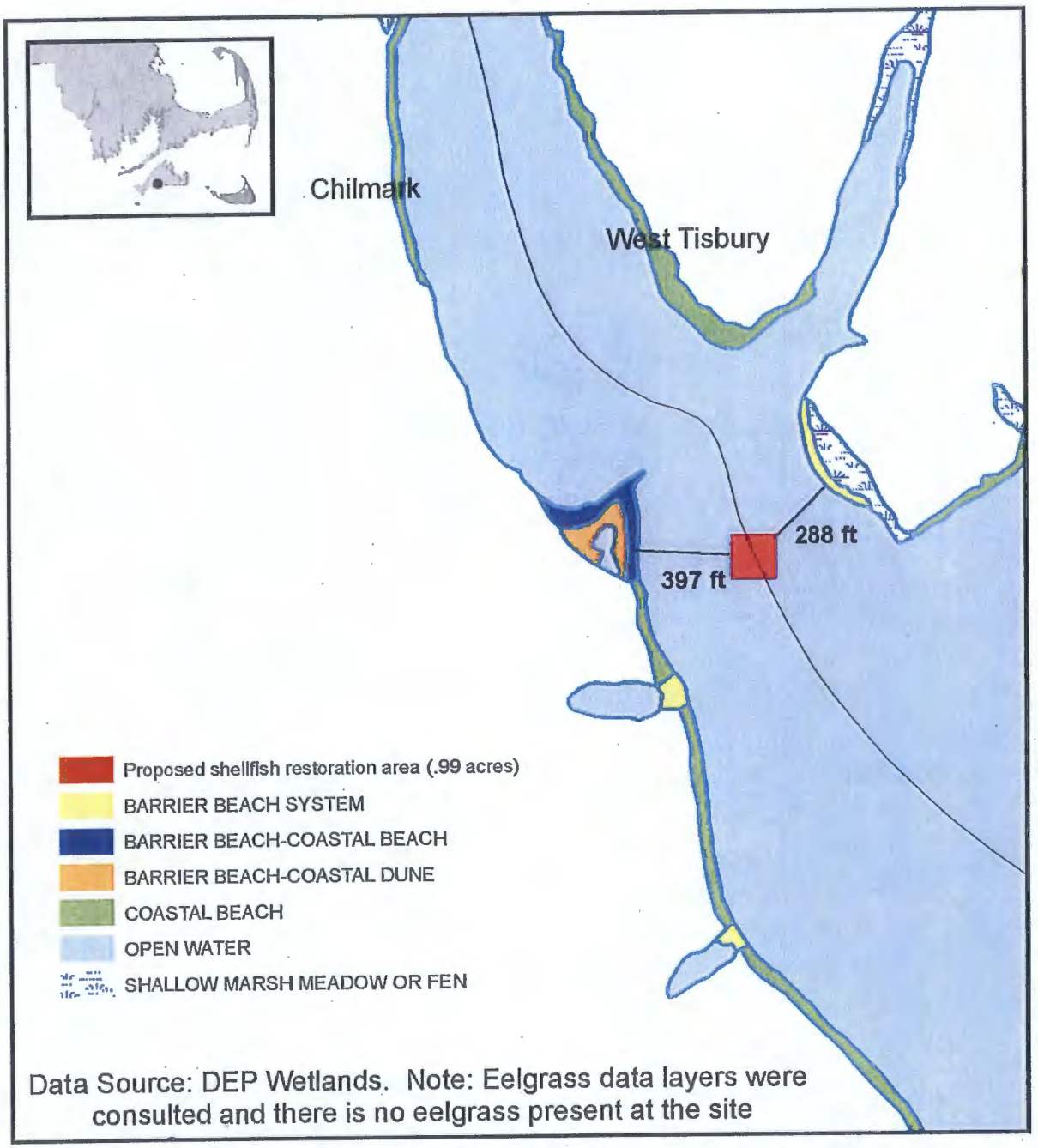
- Proposed shellfish restoration area (.99 acres)
- Ordinary HighWater (ch91)
- NHESP 2008 Priority Habitat for Rare Species
- NHESP 2008 Estimated Habitat for Rare Wildlife

The Nature Conservancy
Protecting nature. Preserving life.

0 0.125 0.25 0.5 Miles

1: 12,000 Jan 2013

N



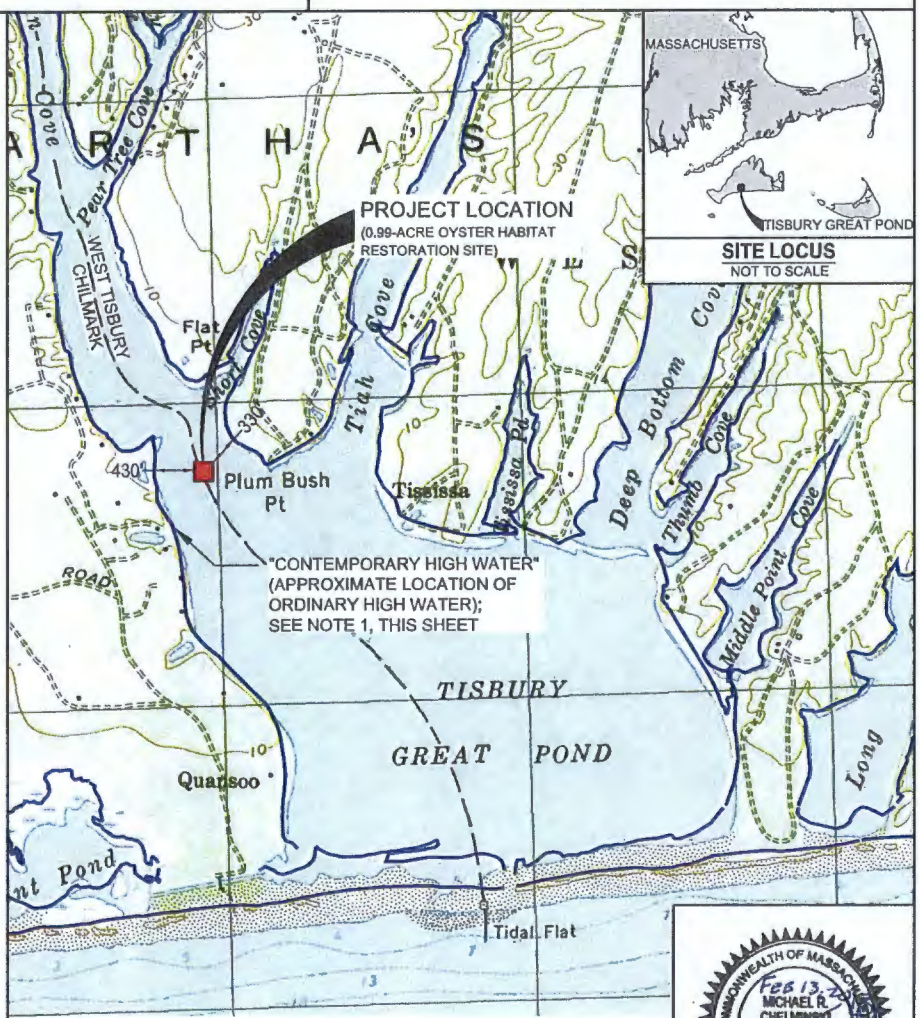
Tisbury Great Pond Oyster Habitat Restoration Project
Wetlands Near Restoration Site

The Nature Conservancy
Protecting nature. Preserving life.

0 0.075 0.15 0.3 Miles

1: 7,000 Jan 2013

N



SITE LOCUS
NOT TO SCALE

NOTES:

1. THE "CONTEMPORARY HIGH WATER" LINE SHOWN ON THIS DRAWING IS THE TIDELANDS JURISDICTION DATALAYER "CZM-CONTEMP_HIGHWATER" DEVELOPED BY THE MASSACHUSETTS OFFICE OF COASTAL ZONE MANAGEMENT AND AVAILABLE THROUGH THE MASSACHUSETTS OFFICE OF GEOGRAPHIC INFORMATION (MassGIS). FOR THE PURPOSES OF THIS PROJECT, THE CONTEMPORARY HIGH WATER LINE IS CONSIDERED SUBSTANTIALLY EQUIVALENT TO THE "ORDINARY HIGH WATER" LINE.

COMMONWEALTH OF MASSACHUSETTS
Feb 13, 2013
MICHAEL R. CHELMINSKI
CIVIL
No. 47197
REGISTERED PROFESSIONAL ENGINEER

PROJECT LOCATION

Plans Accompanying Petition of
The Nature Conservancy,
Oyster Habitat Restoration Project
Great Tisbury Pond, West Tisbury & Chilmark

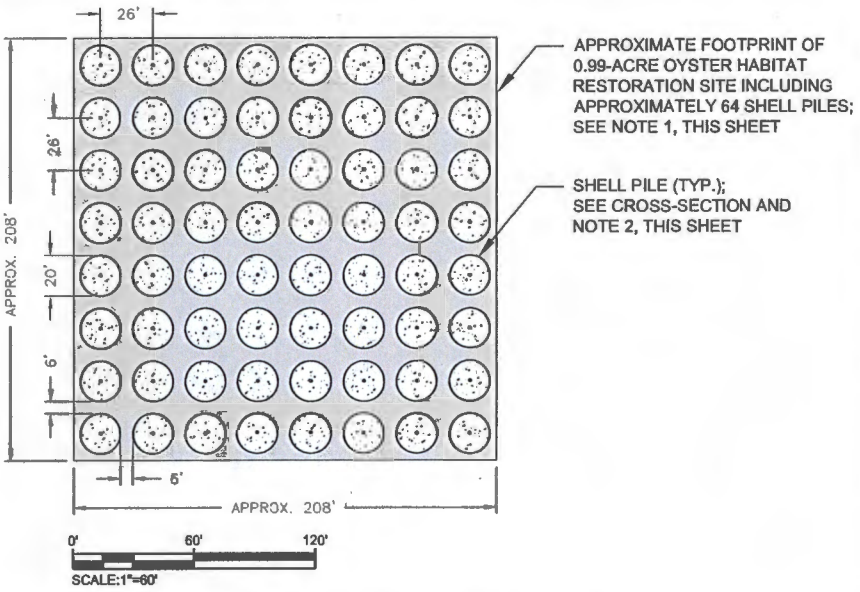
The Nature Conservancy
Protecting nature. Preserving life.

SHEET 1 OF 2
FEBRUARY 13, 2013

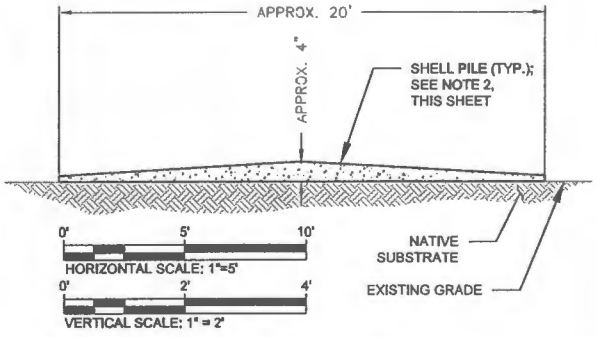
N

0 400' 800'

SCALE:1"=400'



PLAN VIEW OF 0.99-ACRE OYSTER HABITAT RESTORATION SITE



CROSS-SECTION OF TYPICAL SHELL PILE
(VERTICAL EXAGGERATION = 2.5)

Feb 13, 2013

PLAN VIEW AND TYPICAL CROSS-SECTION

Plans Accompanying Petition of
The Nature Conservancy,
Oyster Habitat Restoration Project
Great Tisbury Pond, West Tisbury & Chilmark

The Nature Conservancy
Protecting nature. Preserving life.

SHEET 2 OF 2
FEBRUARY 13, 2013

NOTES:

1. APPROXIMATELY 64, 1-CUBIC-YARD (CY) SHELL PILES TO BE PLACED ON EXISTING POND BOTTOM SUBSTRATE WITHIN THE APPROXIMATELY 0.99-ACRE PROJECT SITE (LOCATION SHOWN ON SHEET 1). TOTAL FILL IS APPROXIMATELY 64 CY.
2. EACH 1-CY SHELL PILE TO CONSIST OF SEASONED SHELL MATERIAL FROM SOURCES THAT MEET MASSACHUSETTS DIVISION OF MARINE FISHERIES REQUIREMENTS TO PREVENT DISEASE AND PATHOGEN TRANSFER. SHELL PILES SHALL MEASURE APPROXIMATELY 20 FEET IN DIAMETER AND APPROXIMATELY 4 INCHES HIGH AT THE CENTER POINT.