



Nantucket Land Council, Inc.

Six Ash Lane
Post Office Box 502
Nantucket, Massachusetts 02554

508 228-2818

Fax 508 228-6456

nlc@nantucketlandcouncil.org

www.nantucketlandcouncil.org

Rec. @ 9/2/15
Hearing from
E. Molden

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Nantucket Land Council, Inc

September 2, 2015

Dr. Ernie Steinauer, Chair
Nantucket Conservation Commission
2 Bathing Beach Road
Nantucket, MA 02554

Re: Siasconset Beach Preservation Fund NOI

Dear Commission,

The Nantucket Land Council, Inc is a 501 c 3 non-profit organization. We have participated extensively in the public hearing process for the proposed Geotube Project over the past two years. We have reviewed the new Notice of Intent filing and would like to make the following initial comments.

Previous Submissions

The applicants have requested that all materials submitted during the previous NOI review process for DEP File No. SE48-2610, including materials submitted during the DEP SOC review process, be included in the administrative record for the current NOI. We are presuming this to include all of the materials submitted by the Nantucket Land Council and our consultants, Applied Coastal Research and Engineering (ACRE). If not we will submit those items to the record under separate cover.

Previously Issued OOC

The new Notice of Intent application includes the maintenance of the existing three tier geotextile tube system, construction of returns, construction of a fourth tier of geotextile tubes and ongoing mitigation and monitoring. Some of these elements are new, but the application is largely the same as that which the Conservation Commission (the Commission) denied under SE48-2610. As such, we hope the Commission is carefully considering all of the findings it made in the denial issued for SE48-2610 and that if a permissive order is issued for this application, can account for a



change in all of these findings appropriately. I am attaching a copy of the OOC Special Conditions for your records.

Consultant Review

Our consultants, ACRE, have also reviewed the new Notice of Intent and have provided more specific comments in the attached Memo. We ask that the Commission review these comments carefully and incorporate them into your deliberations.

Failure Criteria

In addition to the above, we would like to comment on the Failure Criteria proposed, as described in the SOC issued by DEP for SE48-2610 in a letter dated December 19, 2014.

Special Condition 15d states that one of the failure criteria for this project will be, "*Excessive loss in updrift or downdrift beach cross section that can be attributed to the project*". This is an extremely important impact to monitor, but it has been left extremely vague. The Commission should further define "Excessive Loss" if a positive OOC is issued. The Commission could further define this criteria as having 3 successive quarterly surveys document an erosion rate that exceeds the average annual erosion rate.

Thank you for your time,



Emily Molden
Resource Ecologist

Enclosures



Applied Coastal Research and Engineering, Inc.
766 Falmouth Road
Suite A-1
Mashpee, MA 02649

Memorandum

Date: September 2, 2015
To: Emily MacKinnon and Cormac Collier, Nantucket Land Council
From: John Ramsey, P.E. and Trey Ruthven
Subject: Sconset Bluff Geotextile Tube Project, August 14, 2015 Notice of Intent

We have reviewed the Sconset Bluff Geotextile Tube Project Notice of Intent submitted by the Siasconset Beach Preservation Fund (SBPF) on August 14, 2015. The latest NOI represents a minor modification of the project presented in the previous NOI which was filed in support of the Emergency Geotextile Project completed in January 2014. It should be noted that a majority of our concerns regarding the previous filing have not been adequately addressed or resolved. Those comments are contained within the administrative record and will not be duplicated as part of these comments.

- Over the period of time that the Geotextile Tube Project has been permitted, reviewed, and constructed, FEMA has reanalyzed and updated the flooding, wave setup, and run-up that would occur during severe return period storm events along the base of Sconset Bluff. The previous Flood Insurance Study (FIS), dated November 6, 1996, indicates the 1% still water level (without wave setup) at Sconset is equal to 10.2 feet MLW, the effective FIS study, dated June 9, 2014, reduces the 1% still water level to 5.8 feet NAVD, which is approximately 3 feet lower than the previous study (accounting for vertical datum shifts). The supporting information provided as part of the NOI, utilizes the superseded flooding information from FEMA as the basis for the design of the geotextile tubes. The FIS study provides information regarding wave setup and run-up which are all considerably lower in magnitude than those utilized as the basis for the geotube design. The new effective FIS information suggests that the design is overly conservative and possibly even negates the need for a fourth row of geotubes.
- The monitoring plan that has been carried out on the behalf of SBPF for the last 20-years was created to monitor the beach dewatering system. The monitoring plan has evolved over the years to include additional transects, top of bluff measurements, changes in base stations and benchmarks due to on-going erosion of the bluff, etc. Monitoring reports are published typically on a semi-annual basis, with some basic

analysis which over the 20-year period has provided limited quantitative information regarding volume changes at select transects. But the results of the monitoring plan have not been able to provide any scientific or engineering conclusions relative to sediment transport directions, magnitudes, or quantities. Without this information, the proposed monitoring as planned, cannot serve as the basis for determining the causes of erosion or accretion on adjacent shorelines. The adverse impacts created by the installation of the geotextile tube revetment structure along the Sconset bluff will not be quantifiable, either in the near-field or far-field. The monitoring plan needs to be modified to provide accurate quantifiable measurements specific to the impacts of the geotextile tube revetment and the associated influence of mitigation and manipulation of the beach through regular maintenance of the geotubes and bank. At a minimum the monitoring plan should include the following:

1. Quarterly survey transects should include the top of bank, beach and offshore regions.
2. Continuous shoreline change and the top of bank measurements should be monitored for a distance of at least 1000 feet north and south of the project limits.
3. The location of the top of bank should be measured at all transect locations each time a monitoring survey is conducted.
4. The volume of sediment placed on the beach, on the structure, and across the bank should be reported. Ideally with the individual volumes accounted for independently.
5. Details regarding each time nourishment is placed, groomed, and/or manipulated in any way.
6. Project surveys shall not be performed within 30 days after placement or grooming of nourishment material to avoid "skewing" of results.
7. Document any damage occurring immediately after storm events. This should include photographs, written narrative, magnitude and characteristics of the storm, and additionally a survey of the affected areas.
8. In addition to the criteria listed in the SOC, a storm should also be considered "significant" if it requires additional re-nourishment and/or re-grading and manipulation of the existing nourishment template.
9. All surveys going forward should be conducted in North American Vertical Datum of 1988 (NAVD88) to reduce confusion regarding the absolute level of the vertical datum.

It is critical for the Commission to understand that even with the monitoring data; it will be very difficult to assign direct causation to erosion or accretion changes along the eastern coast of Nantucket. The adverse impacts associated with placing a coastal engineering structure along Sconset Beach and Bluff will be significant, however the natural forces (wind, waves, rain, water levels, etc.) and anthropogenic forces (coastal engineering structures, upland development, irrigation, runoff, etc.) acting on the shoreline will make it impracticable to define an exact cause or impact.

The monitoring plan should include the evaluation of the data by an independent coastal engineer to provide an objective review of the impacts the geotextile tube revetment structure is having upon the Sconset Beach littoral system. The latest monitoring report (Southeast Nantucket Beach Monitoring, April 2015, 64th Survey Report, dated June 2015) was accompanied by a review of the processed data conducted by COWI North America. COWI (formally Ocean Coastal Consultants (OCC) and the designers of the geotextile tube project) do not represent an independent review of the Woods Hole Group monitoring surveys for SBPF. The designers of the geotextile tube project should not be reviewing the monitoring data, and determining the effectiveness and impacts of a project they designed and then characterizing it as independent review.

Although the various projects, including the geotextile tube project, have been located on Town property the baseline data from the monitoring plan has never been publically available. Since the geotextile tube revetment has potential to significantly affect adjacent public resources, as well as property owners, the monitoring data (X, Y, Z data to a known horizontal and vertical datum) and analysis should be available to the public to review, analyze, and comment.

- The returns for the 4th row of geotextile tubes should not extend beyond the lot lines allowed in the Superseding Order of Conditions (SOC) issued by Massachusetts Department of Environmental Protection on December 19, 2014. The currently proposed returns extend to the north and south onto 87 and 101 Baxter Road which were prohibited in the SOC from receiving a 4th row of geotextile tubes. The return can be designed to provide the needed level of protection without extending beyond the approved boundaries for the 4th row of geotextile tubes.

DENIAL

Massachusetts Wetlands Protection Act (MGL Chapter 131, Section 40)
Town of Nantucket Wetlands Bylaw (Chapter 136)

Address: 85-107A Baxter Road
Assessor's Map and Parcel: 48-8, 14, 14.1, 15, 17, 18, 19, 21, 22, 35
Property Owner: Town of Nantucket/see attached list
Applicant: Siasconset Beach Preservation Fund, Inc. and Town of Nantucket
DEP File Number: SE48-2610
Filing Date: October 25, 2013
Date Hearing Closed: May 14, 2014
Date Orders Issued: June 3, 2014
Plan of Record Information: "Record Drawing Emergency Installation of Sand Filled Geotubes", dated 1/27/2014, Final revision of 4/24/2014, and stamped by Leo C. Asadoorian, P.L.S.

Permit Overview:

This order denies a permit to maintain a three tier geotube system with sand nourishment, and replanting of the bank face on a Coastal Bank, Coastal Beach and Land Subject to Coastal Storm Flowage.

Project Proposal:

The Order of Conditions is based on information submitted in the Notice of Intent dated October 23, 2013, its attachments and the plan of record, "Record Drawing Emergency Installation of Sand Filled Geotubes", dated 1/27/2014, Final revision of 4/24/2014, and stamped by Leo C. Asadoorian, P.L.S. The Commission also considered and relied upon other pertinent supplemental information including and not limited to:

1. Original Filing Package by the Town of Nantucket (TON) and the Siasconset Beach Preservation Fund (SBPF), dated 10/23/2013
2. 2014-5-14 NLC Submission
3. 2014-5-14 Van Lieu Submission
4. 2014-5-14 Roggeveen Quidnet Squam Submission
5. 2014-5-14 Atherton Submission
6. 2014_5_9 SBPF Submission
7. 2014_5_9 SBPF Submission Regulatory Compliance
8. 2014-5-2 Trillos Submission
9. 2014_4_30 Van Lieu Submission
10. Sconset Presentation 2014-4-30
11. 2014_4_28 Sconset Bluff Updated Returns Plans
12. 2014_4_25 SBPF Submission
13. 2014_4_2 Ian Golding Submission
14. Applied Coastal 2013_11_8
15. Baxter Road Homeowners 2013_11_12
16. Case Study 2013_10_30
17. Cottage and Castle 2014_2_17
18. DPW Submission 2013_11_13
19. Enforcement Order 2014_2_5

Town of Nantucket and Siasconset Beach Preservation Fund, SE48-2610; 85-107A
Baxter Road

20. FishTec Inc 2014_2_12
21. Flint Industries 2014_2_18
22. Jim OConnell Letter 2013_11_4
23. Kopelman and Paige 2013_11_13
24. Mary Wawro Submission 2013_11_6
25. Memo from Ocean and Coastal Consulting 2013_12_6
26. Milone and MacBroom 2013_10_25 Attachments
27. Milone and MacBroom 2013_10_25 Narrative and Plans
28. Milone and MacBroom 2013_11_1
29. Milone and MacBroom 2013_11_05
30. Milone and MacBroom 2013_11_19
31. Milone and MacBroom 2013_12_03
32. Milone and MacBroom 2013_12_03_Nantucket_PlanSet
33. Milone and MacBroom Letter 2013_11_12
34. Milone and MacBroom Plans 2013_10_30
35. Nantucket Land Council and Applied Coastal 2013_11_1
36. Nantucket Land Council Letter 2014_2_18
37. NLC 2013_11_01
38. NLC Submission 2014_3_28
39. Notice of Intent Application
40. Posner Letter 2013_11_18
41. Quidnet Squam 2013_11_19
42. Roggeveen Submission 2013_10_30
43. SBPF- ASBUILT-JAN-30-2014
44. SBPF Letter 2014_2_12
45. SBPF Letter 2014_3_28
46. SBPF Submission 2013_11_1
47. SBPF Submission 2013_11_6
48. SBPF Submittal 2014_3_19
49. Submission from D. Anne Atherton
50. USACE 2014_2_4

Findings:

1. The Commission finds that areas subject to regulation are land under the ocean coastal beach, coastal bank, land subject to coastal storm flowage and their associated buffer zones.
2. The Commission finds that the property is not located within Priority Habitat of Rare Species or Estimated Habitat of Rare Wildlife as defined by the Massachusetts Natural Heritage and Endangered Species Program.
3. The Commission finds that the geotube system is a coastal engineering structure.

The following findings pertain to the Commonwealth of Massachusetts Wetlands Protection Act (MGL Chapter 131 Section 40)

4. The Commission finds that land under the ocean is determined to be significant to the protection of marine fisheries, protection of wildlife habitat, storm damage prevention and flood control.

5. The Commission finds that coastal beach is determined to be significant to storm damage prevention, flood control and protection of wildlife habitat.
6. The commission finds that the coastal bank is determined to be significant to storm damage prevention and flood control because it supplies sediment to the coastal beach.
7. The Commission finds that the coastal bank is determined to be significant to storm damage prevention and flood control because it is a vertical buffer to storm waters
8. The Commission finds that the applicant has not met the burden of proof to demonstrate compliance with 310 CMR 10.25 (5) that projects not included in 310 CMR 10.25(3) or 10.25 (4) which affect nearshore areas of land under the ocean shall not cause adverse effects by altering the bottom topography so as to increase storm damage or erosion of coastal beaches, coastal banks, coastal dunes, or salt marshes.
9. The Commission finds that the applicant has not met the burden of proof to demonstrate compliance with 310 CMR 10.25 (6) that projects not included in 310 CMR 10.25(3) which affect land under the ocean shall if water-dependent be designed and constructed, using best available measures, so as to minimize adverse effects, and if non-water-dependent, have no adverse effects, on marine fisheries habitat or wildlife habitat caused by: (a) alterations in water circulation; (c) alterations in the distribution of sediment grain size; (d) changes in water quality, including, but not limited to, other than natural fluctuations in the level of dissolved oxygen, temperature or turbidity, or the addition of pollutants.
10. The Commission finds that the applicant has not met the burden of proof to demonstrate compliance with 310 CMR 10.27 (3) that any project on a coastal beach, except any project permitted under 310 CMR 10.30 (3)(a), shall not have an adverse effect by increasing erosion, decreasing the volume or changing the form of any such coastal beach or an adjacent or downdrift coastal beach.
11. The Commission finds that the applicant has not met the burden of proof to demonstrate compliance with 310 CMR 10.30 (3) that no new bulkhead, revetment, seawall, groin or other coastal engineering structure shall be permitted on such a coastal bank except that such a coastal engineering structure shall be permitted when required to prevent storm damage to buildings constructed prior to the effective date of 310 CMR 10.21 through 10.37 (August 10, 1978), including reconstructions of such buildings subsequent to the effective date of 310 CMR 10.21 through 10.37, provided that the following requirements are met:
 - a. A coastal engineering structure or a modification thereto shall be designed and constructed as to minimize, using best available measures, adverse effects on adjacent or nearby coastal beaches due to changes in wave action, and
 - b. The applicant demonstrates that no method of protecting the building other than the proposed coastal engineering structure is feasible.
 - c. Protective planting designed to reduce erosion may be permitted.
12. The Commission finds that the applicant has not met the burden of proof to demonstrate compliance with 310 CMR 10.30 (4) that any project on a coastal bank or within 100 feet landward of the top of a coastal bank, other than a structure permitted by 310 CMR 10.30(3), shall not have an adverse effect due to wave action on the movement of sediment from the coastal bank to coastal beaches or land subject to tidal action.

13. The Commission finds that the applicant has not met the burden of proof to demonstrate compliance with 310 CMR 10.30 (6) that any project on such a coastal bank or within 100 feet landward of the top of such coastal bank shall have no adverse effects on the stability of the coastal bank.
14. The Commission finds that the applicant has not met the burden of proof to demonstrate compliance with 310 CMR 10.30 (7) that bulkheads, revetments, seawalls, groins or other coastal engineering structures may be permitted on such a coastal bank except when such bank is significant to storm damage prevention or flood control because it supplies sediment to coastal beaches, coastal dunes and barrier beaches.

The following findings pertain to the Town of Nantucket Wetlands Protection Bylaw (Chapter 136)

15. The Commission finds that the coastal beach is significant to the protection of the following interests: flood control, erosion control, storm damage prevention, fisheries, shellfish, wildlife, recreation and wetland scenic views.
16. The Commission finds that the coastal bank is significant to the protection of the following interests: flood control, erosion control, storm damage prevention, wildlife, and wetland scenic views.
17. The Commission finds that land subject to coastal storm flowage is significant to the protection of the following interests: flood control, erosion control, storm damage prevention, water quality, erosion and sediment control, and wildlife.
18. Pursuant to Section 2.02B(1) of the Nantucket Wetlands Protection Regulations the provisions of Section 2.01B(1-8)(Land Under the Ocean) shall apply to coastal beaches and tidal flats. Therefore the Commission finds that the applicant has not met the burden of proof to demonstrate compliance with Section 2.01B(7) that no new bulkheads or coastal engineering structures shall be permitted to protect structures constructed or substantially improved after 8/78. Bulkheads may be rebuilt only if the Commission determines there is no environmentally better way to control an erosion problem, including in appropriate cases the moving of the threatened building. Other coastal engineering structures may be permitted only upon a clear showing that no other alternative exists to protect a structure built prior to 9/78, but not substantially improved, from imminent danger.
19. Pursuant to Section 2.02B(1) of the Nantucket Wetlands Protection Regulations the provisions of Section 2.01B(1-8)(Land Under the Ocean) shall apply to coastal beaches and tidal flats. Therefore the Commission finds that the applicant has not met the burden of proof to demonstrate compliance with Section 2.01B(8) that water dependent projects shall be designed and performed so as to cause no adverse effects on wildlife, erosion control, marine fisheries, shellfish beds, storm damage prevention, flood control and recreation.
20. The Commission finds that the applicant has not met the burden of proof to demonstrate compliance with Section 2.02B(2) that new bulkheads or coastal engineering structures shall be permitted to protect structures constructed, or substantially improved, after 8/78. Bulkheads may be rebuilt only if the Commission determines there is no environmentally better way to control an erosion problem, including in appropriate cases the moving of the threatened building. Other coastal engineering structures may be permitted only upon a clear

- showing that no other alternative exists to protect a structure built prior to 9/78, but not substantially improved, from imminent danger.
21. The Commission finds that the applicant has not met the burden of proof to demonstrate compliance with Section 2.02B(4) that clean fill of compatible grain size may be used on a Coastal Beach but not on a Tidal Flat, only if the Commission authorizes its use, and only if such fill is to be used for a beach or dune nourishment project. All possible mitigation measures shall be taken, as determined by the Commission, to limit the adverse effects of the fill.
 22. The Commission finds that the applicant has not met the burden of proof to demonstrate compliance with Section 2.05B(1) that new bulkheads or coastal engineering structures shall be permitted to protect structures constructed, or substantially improved, after 8/78 except for public infrastructures. Bulkheads and groins may be rebuilt only if the Commission determines there is no environmentally better way to control an erosion problem, including in appropriate cases the moving of the threatened buildings and/or public infrastructure. Other coastal engineering structures may be permitted only upon a clear showing that no other alternative exists to protect a structure that has not been substantially improved or public infrastructure built prior to 9/78, from imminent danger.
 23. The Commission finds that the applicant has not met the burden of proof to demonstrate compliance with Section 2.05B(3) that all projects shall be restricted to an activity as determined by the Commission to have no adverse effect on bank height, bank stability, wildlife habitat, vegetation, wetland scenic view or the use of a bank as a sediment source.
 24. The Commission finds that the applicant has not met the burden of proof to demonstrate compliance with Section 2.10B(1) that the work shall not reduce the ability of the land to absorb and contain flood waters, or to buffer inland areas from flooding and wave damage.

Therefore, based on the referenced findings, the Nantucket Conservation Commission **DENIES** the project SE48-2610 for the Town of Nantucket and the Siasconset Beach Preservation Fund at 85-107A Baxter Road pursuant to the Massachusetts Wetlands Protection Act (MGL Chapter 131§40), Massachusetts Wetlands Protection Regulations (310CMR 10.00), the Town of Nantucket Wetlands Protection Bylaw (Chapter 136) and the Town of Nantucket Wetlands Protection Regulations. The Commission finds that the given information, historical site conditions and current site conditions that no conditions can be set for the project as proposed that would adequately protect the wetland resources and wetland interests protected by the Massachusetts Wetlands Protection Act and the Town of Nantucket Wetlands Protection Bylaw. Further the Commission finds that the applicant has not met the burden of proof required for the Nantucket Conservation Commission to grant a permit.



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40
And the Town of Nantucket Wetlands Bylaw Chapter 136

Provided by MassDEP:
SE48-2610
MassDEP File #

eDEP Transaction #
Nantucket
City/Town

E. Signatures

This Order is valid for three years, unless otherwise specified as a special condition pursuant to General Conditions #4, from the date of issuance.

6/3/2014
1. Date of Issuance

Please indicate the number of members who will sign this form.

6
2. Number of Signers

This Order must be signed by a majority of the Conservation Commission.

The Order must be mailed by certified mail (return receipt requested) or hand delivered to the applicant. A copy also must be mailed or hand delivered at the same time to the appropriate Department of Environmental Protection Regional Office, if not filing electronically, and the property owner, if different from applicant.

Signatures:

Ernest Steinhauer
Ernest Steinhauer

Sarah Oklay
Sarah Oklay

Andrew Bennett (opposed)
Andrew Bennett

Ian Golding
Ian Golding

Michael Glowacki
Michael Glowacki

Jennifer Karberg
Jennifer Karberg

by hand delivery on
6/4/2014
Date

by certified mail, return receipt requested, on
Date

F. Appeals

The applicant, the owner, any person aggrieved by this Order, any owner of land abutting the land subject to this Order, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate MassDEP Regional Office to issue a Superseding Order of Conditions. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and a completed Request of Departmental Action Fee Transmittal Form, as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Order. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.

Any appellants seeking to appeal the Department's Superseding Order associated with this appeal will be required to demonstrate prior participation in the review of this project. Previous participation in the permit proceeding means the submission of written information to the Conservation Commission prior to the close of the public hearing, requesting a Superseding Order, or providing written information to the Department prior to issuance of a Superseding Order.

The request shall state clearly and concisely the objections to the Order which is being appealed and how the Order does not contribute to the protection of the interests identified in the Massachusetts Wetlands Protection Act (M.G.L. c. 131, § 40), and is inconsistent with the wetlands regulations (310 CMR 10.00). To the extent that the Order is based on a municipal ordinance or bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.