



*The Commonwealth of Massachusetts*  
*Executive Office of Energy and Environmental Affairs*  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Deval L. Patrick  
GOVERNOR

Maeve Vallely Bartlett  
SECRETARY

Tel: (617) 626-1000  
Fax: (617) 626-1181

<http://www.mass.gov/envir>

October 3, 2014

CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS  
ON THE  
ENVIRONMENTAL NOTIFICATION FORM

PROJECT NAME : Baxter Road and Sconset Bluff Stabilization Project  
PROJECT MUNICIPALITY : Nantucket  
PROJECT WATERSHED : Nantucket Harbor  
EEA NUMBER : 15240  
PROJECT PROPONENT : Siasconset Beach Preservation Fund  
DATE NOTICED IN MONITOR : August 6, 2014

Pursuant to the Massachusetts Environmental Policy Act (MEPA, M.G.L. c.30, ss.61-62I) and Section 11.06 of the MEPA regulations (301 CMR 11.00), I hereby determine that this project **does not require** the preparation of an Environmental Impact Report (EIR).

Project Description

The project consists of the construction of an emergency stabilization project in Siasconset (Sconset), Nantucket to protect houses constructed prior to 1978, Baxter Road and public utilities from storm damage. It includes installation of sand-filled geotextile tubes (geotube) and beach nourishment. The installation includes three stacked rows of sand-filled geotubes (45-foot circumference, 19-foot width, 7-foot height) installed along approximately 900 linear feet (lf) of the base of the Sconset Bluff. The installation was approved by the Nantucket Conservation Commission (NCC) through an Emergency Certification issued on December 17, 2013. In issuing the Emergency Certification, the NCC made the following findings:

- the proximity of Baxter Road to the eroding coastal bank constituted imminent danger and was an emergency;
- the failure of the public way and damage of the public utilities is a risk to public health and safety; and,
- the project was necessary to abate the emergency situation.

The geotubes were installed within an approximate 35-day construction window in December 2013 and January 2014.

The Emergency Certification required that the Proponent file a Notice of Intent (NOI) within 30 days to address the installation and maintenance of the geotubes and to identify mitigation. The NOI addresses the elements of the project that have been constructed, proposes the addition of a fourth tier of geotubes, proposes the construction of returns (consisting of 15-foot circumference geotubes) to minimize end effects, identifies mitigation measures, including beach nourishment, monitoring and maintenance, and identifies additional mitigation measures, including a vegetation plan.

### MEPA Process and Segmentation

The purpose of MEPA review is to provide meaningful opportunities for public review of the potential environmental impacts of projects for which Agency Action is required, and to assist each Agency in ensuring that the project will employ all feasible means to avoid and minimize, or mitigate Damage to the Environment to the maximum extent practicable. MEPA does not approve or deny projects.

A number of shore stabilization projects have been proposed along Sconset Bluff since the 1990s. Although the scope of the ENF review is limited to the emergency action, I have considered this project within the context of the high erosion rates experienced along the Sconset bluffs, previous project proposals, and previous projects that have been undertaken. The Proponent and the Town of Nantucket (the Town) have proposed more comprehensive alternatives to address long-term erosion, including major beach nourishment (EEA #13468), an armored revetment, and a more extensive geotube installation, and alternative access to Baxter Road. This project was proposed as an interim emergency measure in the absence of an approved long-term project. Subsequent proposals could include a linear extension of this system or a different shore stabilization project. In addition, the Town is considering alternate access points in the event Baxter Road is breached and indicates its intention to relocate Baxter Road and associated utilities.

The MEPA regulations include anti-segmentation provisions (301 CMR 11.01 (2)(c)) to ensure that projects, including any future expansion thereof, are not segmented to evade, defer or curtail MEPA review. In other words, proponents cannot divide one project into multiple projects each of which individually has an insignificant environmental impact, but which collectively would have significant impact and could exceed an EIR threshold.

Many commenters have suggested that an EIR be required to address the full extent of impacts associated with the emergency project as well as cumulative impacts associated with a long-term shore protection project. Comments suggest that the review of the emergency action, in the absence of a plan for the long-term, is contrary to the anti-segmentation provisions of the MEPA regulations. While I agree that review of these projects should be comprehensive and consider cumulative impacts, I do not find any evidence that the Proponent is seeking to curtail or defer MEPA review. Rather, the segmentation results from the construction of a project to address an emergency situation. The Proponent and the Town have coordinated on both the

emergency measure and long-term projects. The Proponent and Town have clearly stated their intentions to consider large-scale alternatives for this area. State Agencies have been involved in the review of permitting of these projects.

Large-scale projects proposed for this area have undergone extensive MEPA review, including robust analysis of project alternatives; subsequent large-scale projects will likely exceed EIR thresholds and also be subject to comprehensive review. Cumulative impacts will be considered, as appropriate, in the determination of whether a subsequent project exceeds EIR thresholds. The review of the emergency project's consistency with the Wetlands Protection Act (310 CMR 10.00) and environmental impacts by MassDEP will not preclude evaluation of long-term alternatives. Furthermore, if the emergency project were subject to an EIR it would preclude MassDEP from taking action on the appeal of the NOI, including changes to the design of proposed elements and specific and enforceable mitigation commitments, until review of the EIR was completed.

### Project Site

Sconset Bluff is a coastal bank located along the eastern shore of Nantucket Island. It has been subject to significant erosion associated with its exposure to storms, a narrow fronting beach, and sandy composition. Baxter Road is a public way with underground public utilities. North of Bayberry Lane, Baxter Road provides the sole means of access to a number of pre-1978 homes, located both landward and seaward of the road, and the historic Sankaty Head Lighthouse. The beach in front of Sconset Bluff is owned by the Town and is a public beach.

The project is located within the Nantucket Historic District (NAN.C/D), a National Historic Landmark, which is listed on the National and State Register of Historic Places. The Sankaty Head Lighthouse is also listed in the National and State Register of Historic Places.

The project site extends approximately 900 feet along the Coastal Bank and Coastal Beach from 87-105 Baxter Road. Buildings constructed prior to 1978 are located on both sides of Baxter Road. During the winter storms of 2012-2013, significant retreat of the Sconset Bluff occurred, leaving the top of the bank 30 to 40 feet from the edge of Baxter Road in several areas and 60 to 70 feet in many others. Surveys conducted during summer 2013 identify the distance between houses and the top of the bluff, including a home that is 8 to 24 feet from the top of the bank. A follow-up survey in April 2014 identified the distance as 4 to 17 feet from the top of bank.

### Project Background

Due to the threat of storm damage to several pre-1978 buildings and a section of Baxter Road, the Town and the Proponent entered into a Memorandum of Understanding (MOU) on July 5, 2013 to address erosion of Sconset Bluff. In accordance with the MOU, the Proponent filed a NOI with the NCC on July 3, 2013 seeking approval for a stone armor revetment extending 4,253 lf along the coastline paralleling Baxter Road (Revetment NOI). Because a portion of the project would be constructed on Town-owned land the MOU required the Town to provide the Proponent with a license to permit access (License Agreement). The Town and the

Proponent signed an Amendment to the MOU on October 9, 2013. The Proponent suspended consideration of the Revetment NOI as the 2013-2014 winter season approached; instead, the Proponent and the Town jointly filed a NOI on October 23, 2013 seeking approval for four tiers of geotubes long approximately 1,500 lf of Sconset Bluff from 87-107A Baxter Road (October 2013 NOI).

Because no decision was issued on the October 2013 NOI and the Proponent felt that emergency action was warranted, the Proponent filed an Emergency Certification Request on November 26, 2013. It included a 900-foot section of the four-tier geotube system that was designed to address the section of the bluff most at-risk (SBPF EC Request). This request was denied by the NCC and appealed to the Massachusetts Department of Environmental Protection (MassDEP). Concurrent with MassDEP's review of the SBPF EC Request, the Town filed its own Emergency Certification Request (Town EC Request) seeking approval for a hybrid geotextile/jute system, in which the lower two tiers were composed of geotubes and the upper tiers were composed of jute tubes. NCC approved the Town EC Request on December 4, 2013. Subsequently, MassDEP approved the SBPF EC Request on December 10, 2013 subject to certain conditions. The MassDEP approval indicated that the project was "necessary to abate the present threat to public safety from storm damage to buildings, Baxter Road and water infrastructure."

To reconcile the conflicting emergency certifications, the Proponent and the Town jointly filed an Emergency Certification Request on December 17, 2013 (Joint EC Request) for the four-tier geotube project, as amended by any conditions set forth by MassDEP in its Emergency Certification (MassDEP EC). The NCC approved the construction of three tiers of geotubes, subject to certain conditions, including incorporation of conditions included in the MassDEP EC. These included:

- File a NOI within 30 days of EC to address the installation and maintenance of the geotubes and to identify mitigation.
- Sand-filled Geotubes shall be tapered into the beach/bank at the southern and northern ends to minimize end effects.
- Upon installation, the Proponent must place an initial cover of 18 cubic yards per linear foot (cy/lf) followed by the addition of 4 cy/lf to provide a total of 22 cy/lf of nourishment.
- Replenishment triggers to ensure 22 cy/lf of cover on an annual basis.
- Nourishment material must be imported from an off-site source and must be compatible with existing beach sediments.
- Monitoring program consistent with the ongoing quarterly survey program conducted by Woods Hole Group.
- Identification of impact and failure criteria and provisions for removal if warranted.

Following installation of the Emergency Project, the Proponent resubmitted the October 2013 NOI seeking approval for four tiers of geotubes (Geotube Project NOI), rather than filing a new NOI for the three-tier geotube project. The Geotube Project NOI was amended to reduce the length from the proposed 1,500 lf to the authorized 900 lf. The Geotube Project NOI, the subject of this MEPA review, describes: the installation and maintenance of the three-tier geotube structure; proposes additional project components, including installation of a fourth tier of geotubes, construction of end returns consisting of 15- foot circumference geotubes to prevent flanking, planting of vegetation on the face of the coastal bank above the geotubes, and coastal bank drainage improvements; and, monitoring and mitigation measures.

The NCC issued a Denial Order of Conditions (OOC) for the Geotube Project NOI on June 3, 2014. The Proponent filed a request for a Superseding Order of Conditions (SOC) with MassDEP on June 17, 2014.

#### Environmental Impacts and Mitigation

The project will result in permanent impacts to 35,500 square feet (sf) of Coastal Beach, 900 linear feet (lf) of Coastal Bank, and 35,500 sf of Land Subject to Coastal Storm Flowage (LSCSF). The project will also result in temporary impacts to 35,000 sf of Coastal Beach and LSCSF associated with construction-related impacts, including excavation of trenches and stockpiling of material. The structure will displace natural sediment sources to the littoral system associated with Sconset Bluff and portions of the beach (fronting, adjacent, and downdrift beaches), which could impact adjacent properties.

Measures to avoid, minimize and mitigate environmental impacts include a commitment to maintain 22 cy of sand cover over the system and additional nourishment of the beach in front of the system to avoid impacts to adjacent properties, a vegetation plan, design of end returns to reduce scour, use of off-site compatible sand sources; monitoring and reporting program, and identification of impact and failure criteria and provisions for removal if warranted.

#### Permits and Jurisdiction

The project is undergoing MEPA review and requires preparation of an ENF pursuant to 301 CMR Section 11.03(3)(b)(1)(a) and 11.03(3)(b)(1)(f) of the MEPA regulations because it will require a State Agency Action and will result in alteration of Coastal Bank, and alteration of one-half or more acres of other wetlands (Coastal Beach). The project requires a SOC from MassDEP.

The project also requires review by the Massachusetts Historical Commission (MHC) acting as the State Historic Preservation Officer (SHPO) pursuant to Section 106 of the National Historic Preservation Act (NHPA). The project may require federal consistency review by the Massachusetts Office of Coastal Zone Management (CZM).

Because the Proponent is not seeking State Financial Assistance, MEPA jurisdiction extends to those aspects of the project that are within the subject matter of required or potentially required state permits and that may cause Damage to the Environment, as defined in the MEPA regulations. In this case, MEPA jurisdiction extends to land alteration and coastal resources.

### Review of the ENF

The ENF provides a detailed description of the project (including constructed and proposed elements), construction methodology and describes the permitting and certification process for the geotube system. It includes an alternatives analysis, project plans, record drawings, and calculations, and identifies measures to avoid, minimize and mitigate project impacts including a beach monitoring program.

### *Alternatives Analysis*

The ENF identifies alternatives that have been evaluated over the past twenty years. The ENF groups these alternatives into three categories: the No Action/Retreat Alternative; Previously Reviewed/Implemented Alternatives; and Emergency Project Alternatives.

The Proponent asserts that the No Action/Retreat Alternative has been shown to be ineffective in the project area and would result in the near-term loss of part of Baxter Road. It was rejected based on potential loss of pre-1978 homes and public infrastructure, and because it would not provide any long-term benefits to pre-1978 homes on the landward side of Baxter Road, many of whom have already moved their homes from the seaward side of Baxter Road and now see them threatened again by the loss of access to their homes. Previously Reviewed/Implemented Alternatives include beach dewatering, beach nourishment, marine mattresses and gabions, and revetments. These were rejected based on a lack of success of the installed system, opposition to the projects by Nantucket residents, denial by the NCC, or permitting/construction infeasibility within the available timeframe for the emergency condition. The ENF indicates that, although the revetment was considered a viable long-term option, it could not be permitted and constructed within the timeframe necessary to address the emergency condition. Consideration of the revetment was suspended to address the emergency condition.

Alternatives considered for the Emergency Project that could be constructed in the available timeframe include steel sheet piling, grout injections, jute or fabric terraces, and geotubes (the Preferred Alternative). Steel sheet piling was rejected because it was considered unlikely to be permitted by the NCC due to the environmental impacts. Grout injections were also rejected due to the cost, time of installation, and need for further study. The Proponent evaluated the use of coir or jute bags to form all or part of the coastal structure at Sconset Bluff before and after the three-tier geotube structure was constructed. The Proponent asserts that these biodegradable materials cannot withstand wave impacts associated with the Atlantic Ocean. The Proponent asserts that the coastal bank would be vulnerable during major, successive, or multi-day storms because the coir/jute terraces are designed to rip open (fail) during storm events. Because the purpose of the project is to avoid any additional bank loss, the Proponent does not consider coir/jute terraces as a viable option.

Geotubes are fabricated from high-strength, woven polypropylene sewn together into a tube shape and then filled and covered with clean sand. They are durable and can be designed to withstand significant storm events and mitigate scour and flanking. In addition, they can be readily emptied and removed. The geotubes do prevent the bank from eroding and contributing sand into the littoral system. The Proponent determined that this alternative could be designed to provide adequate protection for the toe of the coastal bank, could be constructed within a short timeframe, and was cost-effective. The geotubes were identified as the Preferred Alternative. Based on its analysis, the Proponent proposes to use geotubes for the fourth tier of the installation.

Comments from MassDEP indicate that the alternatives analysis should have separated the No Action alternative from the Retreat alternative because they are distinct and should be analyzed separately. No action implies a continuation of the status quo with no additional measures taken, while retreat implies the managed relocation of threatened structures (buildings, roads, etc.) on an as-needed basis. MassDEP notes that relocation of threatened structures on Baxter Road and other locations along the eastern and southern facing shorelines of Nantucket has historically been the most common response to shoreline erosion. Subsequent analysis of an extension of the geotube system, a revetment or other proposals should include consideration of the Retreat Alternative.

I note the comments from the Nantucket Land Council (NLC) that indicate that the addition of a biodegradable fourth tier could be successful if implemented with additional nourishment in the volumes proposed for the Geotube Project. In addition, comments from CZM encourage the Proponent to consider softer solutions than the proposed geotubes and design refinements to reduce end scour, such as sand-filled coir bags and tapering of the elevation and slope to minimize the amount of reflected wave energy and associated erosion. MassDEP indicates it will evaluate the Preferred Alternative and other alternatives outlined in the ENF prior to the issuance of a SOC. I agree that consideration of limited alternatives for the proposed fourth tier and the returns is warranted to ensure that all feasible measures have been taken to avoid, minimize and mitigate environmental impacts.

The Town owns the beach area where any shoreline protection structures would be placed. An SOC will not grant any property rights or any exclusive privileges nor does it authorize any injury to private property or invasion of property rights. Consequently, the Proponent will need to secure permission from the Town prior to any additional work at the project site. The MOU required the Town to provide the Proponent with a License Agreement to access Town-owned land. The MOU states that "the Board of Selectman is committed to supporting measures that will have the likely effect of preventing damage to, or destruction of, Baxter Road as long as the project as proposed by SBPF can be accomplished without resulting in further or additional coastal erosion, or other environmental damage." The MOU also states that "the Board of Selectman reserves the right to withdraw its consent and support at any time." In consideration of the concerns expressed by the Town regarding the project and its ability to revoke the License Agreement at its discretion, additional consultation with the Town regarding remaining design elements is advisable.

*Coastal Resources*

Wetland resources that will be impacted by the project include Coastal Beach, Coastal Bank, and LSCSF. MassDEP will review the project to determine its consistency with the WPA, the Wetlands Regulations (310 CMR 10.00), and associated performance standards. MassDEP comments indicate it will review alternatives during permitting and that outstanding issues can be addressed during permitting.

The ENF describes the construction methodology that was employed for completed elements of the project and the construction methodology for proposed elements (fourth tier of geotubes, returns, and vegetation). All construction vehicles accessed the beach from Hoicks Hollow and were fueled in the Hoicks Hollow parking lot. Typically, the construction required the use of two excavators, a bulldozer, a skid steer, and a crew transport buggy on the beach. Dump trucks delivered the sand for the sand template from island pits to one of two sand delivery areas at 87/91 Baxter Road and 99/101 Baxter Road. The ENF indicates that the fourth tier would be installed using a similar procedure for the third tier, which would involve a water supply trench and associated dikes.

The NCC issued an Enforcement Order on February 5, 2014 identifying violations, including a subsurface water drain, use of concrete to seal the geotube potholes, alleged work conducted seaward of the Mean High Water (MHW) line, and placement of sand on the coastal bank outside of the sand delivery areas. MassDEP issued an Enforcement Order on June 17, 2014 for a subsurface water drain and a change in construction methodology consisting of the use of a freshwater source for the sand slurry used to fill the geotubes to the use of a saltwater source. MassDEP will review the Enforcement Order issued by the NCC as part of the review of the NOI.

The height of the fourth (top) tier of geotubes will be approximately +26-28 feet Mean Low Water (MLW). According to the ENF, the design basis for the four tiers of geotubes starts with the offshore wave height and then calculates how wave heights, wave setup, and wave runup will occur specific to the project area based on actual nearshore conditions and the stillwater elevation in the area as defined by the Federal Emergency Management Act (FEMA). The Proponent asserts that the minimum design level required for the project to abate the emergency condition is the 100-year storm (one percent chance). Based on the one percent storm recurrence interval, the four-tier geotube system with a base at 0.0 feet MLW will have a top elevation of +26-28 feet MLW.

The project proposes to construct return tubes on the ends of the geotube structure to minimize flanking. The returns will consist of shorter and smaller (15-foot circumference) geotubes installed at a 45-degree angle between the seaward face of the geotubes and face of the coastal bank. The top of the returns will extend to the elevation of the proposed fourth tier (+26-28 feet MLW). The bottom of the returns will be installed to a depth of +3-4 feet MLW. The total project length including the returns will be less than 900 lf. Comments from CZM describe its concerns that the proposed returns will reflect wave energy and extend the increased erosion of the beach and bank further alongshore. In response to recommendations from CZM, supplemental information provided by the Proponent indicates that the return design could be

revised to include a taper in elevation and slope and/or softer materials and makes a commitment to address these during permitting.

The bluff above the geotubes will be vegetated to further stabilize the bank. Vegetation will include American beach grass because of its fast growing, dense root system and tolerance of salt spray and exposure to wind and waves. The upper five to seven feet of the coastal bank will not be vegetated. It will be reserved for swallow habitat as recommended by the NCC. Comments from the Division of Marine Fisheries (DMF) indicate that the project should include measures to reduce overland runoff, including vegetative buffers between lawn and bluff edge. The ENF describes the use of a subsurface water drain to address the formation of a substantial gully at the top of the coastal bank. According to the Proponent, it is recognized that Baxter Road may be a significant source of overland runoff and the Town intends to address this situation.

I note the concerns of the NLC regarding prohibited work below MHW for the installation of the geotube structure. Work that is proposed below the MHW line within flowed tidelands requires review under Chapter 91 from MassDEP. Supplemental information from the Proponent indicates that for any future work on the project, it will mark the MHW line with surveyed stakes or other means throughout the duration of construction. In order to avoid the possibility of working below MHW and ensure accuracy of the line, the Proponent should clearly stake the MHW daily under the direct supervision of a licensed engineer or surveyor. The Proponent should consider a third party licensed professional to verify the survey line to avoid any confusion as to the location of MHW and thereby, prevent work below that line.

The project may be subject to CZM federal consistency review, and if so must be found to be consistent with CZM's enforceable program policies. The Proponent should consult with CZM regarding the federal consistency review process. I note the comments from CZM that indicate its commitment to continue assisting the Town on coastal management issues. CZM staff is available to provide technical assistance to help the Town evaluate alternatives for this dynamic shoreline area in the planning, design and review of the remaining elements of this project and subsequent projects.

#### *Mitigation and Monitoring*

Monitoring is an essential component of this project necessary to assess the performance of the system and potential negative impacts to the downdrift shoreline. The project will eliminate natural sediment sources to the littoral system associated with Sconset Bluff and portions of the beach (fronting, adjacent, and downdrift beaches). The project includes a beach nourishment and monitoring program designed to minimize adverse effects to adjacent or nearby coastal beaches, as required by the performance standard for coastal banks (310 CMR 10.30(3)(a)), and to mitigate for the loss of coastal bank as a sediment source. Elements of this program were required by the Emergency Certifications and are based upon the long-term average annual erosion rate associated with these sources.

In accordance with the requirements of the special conditions in MassDEP's Emergency Certification Form, the Proponent has committed to provide a minimum sand mitigation volume of 22 cy/lf. The volume of required material and replenishment triggers are designed to maintain a minimum 2 cy/lf of cover. The ENF identifies a sand delivery schedule (initial cover, annually in April and September-November, and balance in March). Delivery tickets from sand suppliers will be provided to NCC to document the total volume of sand provided on an annual basis. The ENF describes the availability of the mitigation sand to the littoral system during varying storm recurrence intervals. In addition, the Proponent commits to adding sediment to the beach to maintain the public beach in front of the geotubes.

According to comments from MassDEP, the project will require approximately 19,800 cy of sediment on an annual basis. On-island sand pits will provide the sediment supply. Supplemental information provided by the Proponent indicates that sources on the island can provide enough material to sustain the project's needs for 20-40 years. MassDEP comments express concern about the long-term sustainability of this nourishment program for the existing installation and for subsequent large-scale projects. Comments from residents note that the Proponent does not have exclusive use of the available sand from the island. MassDEP recommends that the Proponent begin evaluating sediment sources for future beach nourishment purposes, including volumes that would be associated with any significantly larger installation project.

The monitoring program will be conducted on a quarterly or bi-annual basis, consistent with monitoring that has been performed for about twenty years, although it includes some minor modifications of profile locations. Surveys will be conducted each spring and each fall. The spring survey will extend from the toe of the bank or dune to the -5 feet MLW contour; the fall survey will include offshore bathymetry and will extend from the toe of the bank or dune to a distance of approximately 2,000 to 3,000 feet offshore or -25 feet to -35 feet MLW, whichever is less. Surveys will be conducted along established and new transects. The top of the coastal bank will also be monitored at the profile locations within the project area and within 300 feet of its ends. The Proponent has indicated that the project will include evaluation of the performance of the geotube structure to determine its effectiveness as well as monitoring to determine whether the project is impacting adjacent properties.

CZM recommends that the monitoring frequency be increased to quarterly monitoring, which is consistent with other shore protection projects in this area and that monitoring reports be distributed within 30 days of data collection to inform timely decisions regarding the need for additional mitigation. DMF comments request additional details on survey design, including summaries of past results and analyses. Supplemental information provided by the Proponent notes that the results of the monitoring surveys have been submitted to various local, state, and federal regulatory authorities including MassDEP, CZM and NCC.

Monitoring reports include the specific methods of the survey and analyses of shoreline and volume change. The annual report will include the following data and analysis:

- Review beach transect data to estimate accretion and erosion distances at each monitored transect;
- Calculate accretion and erosion volumes at transect locations;
- Compare top of bank locations and estimate bank retreat over the previous 12 months;
- Calculate bank volume loss in the project area and 300 feet north and south;
- Submit data and computations to MassDEP, CZM, and NCC for review with a recommendation for changes to the nourishment program, if required; and
- Review results of annual underwater video monitoring, if required.

The Proponent will conduct supplemental monitoring following all significant storms. In accordance with guidance received from the NCC, a storm will be considered significant if there are sustained winds over 40 miles per hour over at least a 6-hour time period. The post-storm inspection and subsequent report will include the following information:

- Photo-documentation of the condition of the structure and nourishment sand with the project area;
- Estimate of the volume of sand lost from the sand template;
- Estimate of the beach level in front of the seaward geotube to determine if replenishment is required (if so, an estimated volume of sand and schedule for delivery will be provided);
- Identification of the location of any exposure geotextile;
- Identification of any repairs required; and
- Visual observation of the ends of the geotubes to determine if flanking is occurring.

The post-storm monitoring report will be submitted to NCC and the Town Department of Public Works (DPW), as soon as possible after a storm event (typically three to seven days). In addition, the Proponent indicates it is willing to perform annual underwater video monitoring of cobble bottom and habitat at selected transects if MassDEP determines that this monitoring is necessary and appropriate:

In the event of project failure, the Proponent will remove the system and has deposited \$150,000.00, in an escrow account, to finance the removal. Failure criteria include:

- Failure to provide the required sand mitigation (beach nourishment) volume;
- Failure to conduct the required shoreline and post-storm monitoring;
- Failure to repair and/or replace the geotubes in a timely manner; and
- Excessive changes to adjacent shorelines (updrift or downdrift beach cross sections) that can be attributed to the project;

The Proponent will add the following two additional failure criteria, if MassDEP determines them to be necessary and appropriate:

- Failure to maintain adequate beach width in front of the geotube structure. Specifically, the Proponent has proposed that failure could be deemed to occur if the beach width in the project area is reduced where the long-term position of the HTL (defined for this purpose as the most seaward high tide location within any two consecutive semi-annual surveys) migrates landward to the location of the seaward edge of the second tier of geotubes; and
- A determination of significant negative impacts to underwater habitats.

### Conclusion

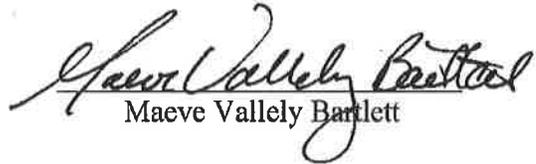
The ENF assesses the potential environmental impacts of the proposed project and proposes monitoring and mitigation measures. I have carefully considered the thoughtful and detailed comments received on this project and appreciate the interest in further evaluation of the project and associated impacts through the MEPA process. I am also mindful that the project consists of an emergency action previously approved by the NCC, the majority of which has already been installed. Comments from State Agencies, including CZM and MassDEP identify issues that should be resolved during permitting; the comments do not identify alternatives that warrant review in an EIR. The ENF has defined the nature and general elements of the project for the purposes of MEPA review and identified measures to avoid, minimize and/or mitigate impacts. The review of the ENF has served to identify potential alternatives that could improve the performance of the project and reduce associated environmental impacts, as well as identify issues that should be addressed during the permitting process.

Based on the information in the ENF, consultation with State Agencies and a review of comment letters, I find that no further MEPA review is required. MassDEP has sufficient regulatory authority to address outstanding design issues and require additional measures to ensure the project is designed and maintained to avoid, minimize and mitigate project impacts. Although I am declining to require the preparation of an EIR, I am directing MassDEP to address the following issues during permitting:

- The feasibility and potential benefits and impacts associated with design alternatives for the fourth tier of the installation and the end returns;
- Construction period mitigation measures and monitoring to ensure the project is constructed and maintained as designed and permitted;
- Evaluation of the adequacy of the monitoring program design, as well as the frequency; and,
- Requirements to ensure timely distribution of monitoring reports.

As noted previously, the Proponent and/or the Town may propose a more comprehensive project to address erosion and any large-scale project that is likely to trigger the requirement for an EIR. The Proponent and/or the Town should consult with the MEPA Office regarding subsequent MEPA review, including whether the project would warrant the filing of a Notice of Project Change (NPC) or a new ENF, and how to address cumulative impacts.

October 3, 2014  
Date

  
Maeve Vallely Bartlett

## Comments Received:

08/15/2014 Massachusetts Historical Commission (MHC)  
08/22/2014 Tom Quigley  
08/22/2014 John and Deborah Osborn  
08/22/2014 David Golden  
08/31/2014 Kyle Latshaw, Loretta Yoder, and Elizabeth Claudy  
09/03/2014 Sanni Judy  
09/05/2014 Peter Watrous  
09/05/2014 Alix Nelson-Frick  
09/06/2014 Stephen Cohen  
09/06/2014 Laurie and Toby Webb  
09/07/2014 Bob Hall  
09/07/2014 Dorothy Vollans  
09/07/2014 Alexandra Sandra Hubiczak-Welsh  
09/07/2014 Catherine Ward  
09/07/2014 Nannette Orr  
09/07/2014 Barbara Bund  
09/07/2014 Dorothy and David Bailey  
09/07/2014 Dallas Kirk  
09/08/2014 Michelle Whelan  
09/08/2014 Cinda Gaynor  
09/08/2014 Thomas Succop  
09/08/2014 Victoria Merson Pickwick  
09/08/2014 David Goodman  
09/08/2014 Charles Walters  
09/08/2014 Susan and Robert Landmann  
09/08/2014 Linda Spery  
09/08/2014 Derek Till  
09/08/2014 Alexandra Harper  
09/08/2014 Philippe Wells  
09/08/2014 Carol and David Cronin  
09/09/2014 Rosanna LaBonte  
09/09/2014 Susan Cooper Cronyn  
09/09/2014 Bruce Mandel  
09/09/2014 Gay Vogt  
09/09/2014 Paul and Judy Carini  
09/09/2014 Massachusetts Division of Marine Fisheries (DMF)

09/10/2014 Julie Young  
09/18/2014 Bill Paulsen  
09/19/2014 Dirk Gardiner Roggeveen, Quidnet Squam Association  
09/20/2014 Ellen Schloss Flamm and Richard G. Peterson  
09/22/2014 Mary Wawro  
09/22/2014 D. Anne Atherton  
09/22/2014 Peter Kellner  
09/22/2014 Elizabeth Trillos  
09/22/2014 Martha Gray  
09/22/2014 Jose Trillos  
09/22/2014 Dirck and Sharon Van Lieu  
09/23/2014 Nantucket Land Council, Inc. (NLC)  
09/23/2014 Nantucket Citizens Letter – 13 signatures  
09/23/2014 Robi Blumenstein  
09/23/2014 Town of Nantucket and Nantucket Conservation Commission  
09/21/2014 Jeanne Dickinson  
09/23/2014 Holly Pagon  
09/23/2014 Katherine Murphy  
09/23/2014 Massachusetts Office of Coastal Zone Management (CZM)  
09/23/2014 Natural Heritage and Endangered Species Program (NHESP)  
09/24/2014 Massachusetts Department of Environmental Protection (MassDEP) Southeast  
Regional Office (SERO)

MVB/PPP/ppp



THE COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS  
OFFICE OF COASTAL ZONE MANAGEMENT  
251 Causeway Street, Suite 800, Boston, MA 02114-2136  
(617) 626-1200 FAX: (617) 626-1240

## MEMORANDUM

TO: Maeve Valley Bartlett, Secretary, EEA  
ATTN: Purvi Patel, MEPA  
FROM: Bruce Carlisle, Director, CZM  
DATE: September 23, 2014  
RE: EEA-15240, Baxter Road & Sconset Bluff Stabilization, Nantucket

The Massachusetts Office of Coastal Zone Management (CZM) has completed its review of the above-referenced Environmental Notification Form (ENF), noticed in the *Environmental Monitor* dated August 6, 2014 and offers the following comments.

### Project Description

The project involves the installation of four rows of 45-foot circumference geotextile tubes along the base of a 900-foot section of coastal bank in the Sconset area of Nantucket. The majority of the project was constructed in December 2013 and February 2014 under an Emergency Certification approval issued by the Nantucket Conservation Commission. This work involved the installation of three rows of 45-foot geotextile tubes. The ENF includes the three geotextile tubes already installed, and proposes an additional fourth row of geotextile tube, as well as 30-foot long geotextile tube returns on either end of the structure. The ENF indicates that twenty, 15-foot circumference return tubes are proposed, set at 45-degree angle between the seaward face of the geotextile tubes and the toe of the adjacent coastal bank. The ENF proposes to vegetate the face of the coastal bank above this structure with beach grass and other native coastal plants, including Bearberry, Beach Heather, Bayberry, and Beach Plum. In addition, a mitigation plan has been proposed which includes an initial covering of the structure with a volume of 22 cubic yards per linear foot (cy/lf), followed by annual nourishment to maintain a minimum 2-foot cover of the geotextile tubes. The annual volume of nourishment would be placed in the spring and fall, with a minimum volume of 22 cy/lf. A monitoring plan is also proposed for this project, which includes bi-annual surveys, as well as post-storm reporting following all significant storms. Post storm reports will include photo-documentation of the structure and surrounding area, estimates of sand volume lost from the proposed beach nourishment template, and determination if replenishment is needed. The Notice of Intent for the project was denied by the Nantucket Conservation Commission, and now requires a Superseding Order of Conditions from the Massachusetts Department of Environmental Protection.

### Project Comments

CZM staff has reviewed the ENF, attended the MEPA site visit on August 20, 2014, and a meeting with MEPA on September 5, 2014. CZM is concerned that the proposed returns will reflect wave energy, extending the increased erosion of the beach and bank further alongshore, and recommends that the proponent use alternative methods for reducing end scour that would reflect less wave energy than the proposed 15' circumference geotextile tubes. In order to mitigate the end scour and avoid extending it onto adjacent areas, CZM typically recommends that softer options



that reflect less wave energy be considered (e.g. sand-filled coir bags and nourishment). The end scour protection should also taper in elevation and slope to minimize the amount of reflected wave energy and the amount of associated erosion.

CZM supports continued beach nourishment as mitigation for the armoring of the coastal bank, which is serving as a sediment source to the fronting and adjacent beaches. It is critical to bring in sediment from an off-site source to mitigate for the loss of this sediment source. In addition, the proponent has committed to adding sediment to the beach to maintain the public beach in front of the tubes.

The project proposal includes beach profile monitoring twice per year. CZM recommends that this be increased to quarterly monitoring, which is consistent with other shore protection projects in this area. CZM also recommends that the monitoring reports be distributed within 30 days of data collection to help inform timely decisions regarding the need for any additional mitigation.

CZM understands that the Town of Nantucket and the Siasconset Beach Preservation Fund are actively looking at potential future alternatives to help manage the protection of both private property and public infrastructure and access along a 4,000+ foot length of shoreline in this area. CZM staff has worked closely with the Town to assist in the development of the Town's Coastal Management Plan for town owned properties, and CZM is committed to continue assisting the Town on coastal management issues. CZM staff is available to provide technical assistance to help the Town evaluate potential future alternatives for this dynamic shoreline area in the planning stages, during the pre-application consultations, and during future MEPA filings.

#### **Federal Consistency**

The proposed project may be subject to CZM federal consistency review. For further information on this process, please contact, Robert Boeri, Project Review Coordinator, at (617) 626-1050 or visit the CZM web site at [www.state.ma.us/czm/fcr.htm](http://www.state.ma.us/czm/fcr.htm).

BKC/sm/rh/rlb

cc: Stephen McKenna,  
CZM Cape & Islands Regional Coordinator  
Elizabeth Kouloheras, Section Chief  
Southeast Regional Office, MA DEP  
Jeff Carlson, Nantucket Conservation Administrator  
2 Bathing Beach Road, Nantucket, MA 02554  
Maria Hartnett, Epsilon Associates, Inc.  
3 Clocktower Place, Maynard, MA 01754

MEMORANDUM

TO: Purvi Patel, Environmental Reviewer, MEPA Unit

THROUGH: Jonathan Hobill, Regional Engineer, Bureau of Resource Protection  
Philip Weinberg, Regional Director  
David Johnston, Deputy Regional Director, BRP  
Maria Pinaud, Deputy Regional Director, BWP  
Millie Garcia-Serrano, Deputy Regional Director, BWSC  
Brenda Chabot, Deputy Regional Director, ADMIN

CC: Elizabeth Kouloheras, Chief, Wetlands and Waterways  
James Mahala, Wetlands Program  
David Hill, Waterways Program  
Pamela Truesdale, Municipal Facilities  
Leonard Pinaud, Chief, Site Management  
Allen Hemberger, Site Management  
Nantucket Conservation Commission

FROM: Sharon Stone, SERO MEPA Coordinator

DATE: September 23, 2014

RE: ENF EOEEA #15240 – NANTUCKET – Baxter Road and Sconset Bluff  
Stabilization Project, 87-105 Baxter Road

\*\*\*\*\*

"For Use in Intra-Agency Policy Deliberations"

The Southeast Regional Office of the Department of Environmental Protection (MassDEP) has reviewed the Environmental Notification Form (ENF) for the proposed Sconset Bluff stabilization project to be located at 87-105 Baxter Road, Nantucket, Massachusetts (EOEEA #15240). The project proponent provides the following information for the project:

An emergency roadway and bluff stabilization project in Siasconset (Sconset), Nantucket was constructed in December 2013 and January 2014 under an Emergency Certification approval issued by the Nantucket Conservation Commission (the "Emergency Project"). The Emergency Project consisted of the installation of three stacked rows of 45-foot circumference geotextile tubes at the base of the eroding Sconset Bluff. As part of the Emergency Certification approval, a Notice of Intent (NOI) was required to be filed, following the commencement of the Emergency Project. The NOI included installation and maintenance of the existing three tier geotextile tube structure; requested the addition of several project components (such as a fourth tier of geotextile tubes, returns, and bluff re-vegetation); and provided detailed monitoring and mitigation measures (considered together, this is referred to as the "Project"). This NOI was issued a Denial Order of Conditions by the Nantucket Conservation Commission on June 3, 2014, and a request for a Superseding Order of Conditions (SOC) was filed with the Massachusetts Department of Environmental Protection (MassDEP) on June 17, 2014. The request for a SOC (which meets the definition of a "Permit" in 301 CMR 11.02), and the exceedance of two MEPA Wetland review thresholds at 301 CMR 11.03(3)(b)1.a. (alteration of a coastal bank) and f. (alteration of ½ or more acres of other wetlands), triggered the requirement for an Environmental Notification Form (ENF).

Permits listed in the ENF to be sought for the project include the following:  
MassDEP Superseding Order of Conditions.

Wetlands and Waterways Program Comments

The Southeast Regional Office, Wetlands & Waterways Program has reviewed the above-referenced Environmental Notification Form (ENF) and has the following comments. The ENF describes the permitting history of the existing 3 tiers of Geotubes, the proposal to add a fourth tier of sand-filled Geotubes, smaller sand-filled Geotubes returns at both ends of the existing Geotubes, coastal bank drainage system, planting of vegetation on the face of the bluff, and ongoing mitigation (beach nourishment) and monitoring of project performance.

**BACKGROUND:** Due to the threat of storm damage to several pre-1978 buildings and a section of Baxter Road with underground public utilities, the Town of Nantucket (Nantucket or “the Town”) and the Siasconset Beach Preservation Fund (SBPF), as joint applicants, requested and received an Emergency Certification (EC) from MassDEP on December 10, 2013 authorizing the installation of 4 tiers of sand-filled Geotubes subject to certain conditions. MassDEP issued the 4 tier Geotube EC after SBPF appealed a Nantucket Conservation Commission (NCC) denial of the locally submitted 4 tier EC request. Subsequent to MassDEP’s issuance of the 4 tier EC, the proponents went back to the NCC, requested and received an EC from the NCC on December 18, 2013 authorizing the installation of 3 tiers of Geotubes 900 feet in length under the Wetlands Protection Act and the town of Nantucket Wetlands Bylaw. The proponents installed the 3 Geotubes in December 2013 and January 2014 under the EC issued by the NCC. The EC required that the SBPF “file a Notice of Intent (NOI) in order to (a) install and maintain the Geotubes and (b) incorporate mitigation (beach nourishment) into the project design.”

Following installation of the 3 Geotubes under the EC, the SBPF pursued a previously submitted NOI for 4 tiers of Geotubes, rather than filing a new NOI for the 3 tier Geotube project. This NOI had originally proposed 1500 lineal feet of Geotubes. SBPF amended it to reduce the length of the Geotubes to 900 lineal feet as authorized by the Town’s Emergency Certification. The NOI seeks to permit and allow the ongoing maintenance of the existing three tiers of Geotubes, installation of a fourth tier of Geotubes to provide a higher level of storm protection, installation of smaller geotextile tubes as returns on the ends of the Geotubes to prevent flanking, planting of vegetation on the face of the coastal bank above the Geotubes, coastal bank drainage improvements and ongoing mitigation (beach nourishment) and monitoring.

It should also be noted that, according to the ENF, the SBPF had previously indicated to the Town that it would not appeal an otherwise acceptable Order of Conditions (OOC) from the NCC that permitted the 3 tier Geotube project that had already been installed under the joint EC.

COMMENTS: The ENF's alternative analysis should have separated the "No Action" alternative from the "Retreat" alternative. No action implies a continuation of the status quo with no additional measures taken. Retreat, on the other hand, implies managed relocation of threatened structures (buildings, roads, etc.) on an as-needed basis. In fact, relocation of threatened structures on Baxter Road and other locations along the eastern and southern facing shorelines of Nantucket has historically been the most common response to shoreline erosion. In the Department's judgment, these two alternatives are distinct and should have been analyzed separately.

The ENF also evaluates structural shore protection alternatives such as a rock revetment, marine mattresses/gabions and sand-filled Geotubes. The alternative analysis also included a "softer" alternative of using coir or jute sand-filled bags or tubes. The proponents have dismissed the use of coir or jute sand-filled bags due to lack of durability to withstand storm conditions. The ENF states that a previously proposed marine mattress/gabion project was denied by the NCC. According to the ENF, a previously filed NOI for a proposed 4000-foot long rock revetment was suspended when it became clear that it could not be permitted and constructed before the 2013-2014 winter storm season. Nonetheless, the ENF states that a rock revetment is still considered a viable long-term option for the protection of a potentially larger section of Sconset Bluff. The proponents have endorsed sand-filled geotextile tubes (Geotubes) as the preferred material for the fourth tier of Geotubes. Further, the ENF states that the performance of the geotextile tubes will be evaluated over the next several years to determine if geotextile tubes or a revetment represent the most effective proposal for the long-term protection of Sconset Bluff.

One of the unique aspects of this shoreline is that the Town owns much of the beach area where any shoreline protection structures would be placed. As a result, the proponents (SBPF) and the Town have a Memorandum of Understanding (MOU) relative to the design, permitting and construction of a coastal engineering structure and for the protection and/or relocation of Baxter Road. The MOU goes on further to state, in part, that "the Board of Selectman is committed to supporting measures that will have the likely effect of preventing damage to , or destruction of, Baxter Road as long as the project as proposed by SBPF can be accomplished without resulting in further or additional erosion, or other environmental damage." The MOU also states that "the Board of Selectman reserves the right to withdraw its consent and support at any time."

As with any SOC or local Order of Conditions, General Condition #2 states "this Order does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of property rights." Consequently, the proponents (SBPF) will need to secure permission from the Town prior to any additional work at the project site.

The performance standards for Coastal Banks at 310 CMR 10.30(3)(a) require, in part, that "a coastal engineering structure or a modification thereto shall be designed and constructed so as to minimize, using best available measures, adverse effects on adjacent or nearby coastal beaches due to changes in wave action." In order to minimize adverse effects to adjacent or nearby coastal beaches, the proponents have proposed a beach nourishment

program consisting of the annual placement of approximately 22 cubic yards of sediment per linear foot of Geotube to mitigate for the loss of a sediment source coastal bank (Sconset Bluff). This program is designed to compensate for the loss of sediment contribution from the coastal bank and is based upon the long-term average annual erosion rate. Based upon a 900-foot length, this computes to be approximately 19,800 cubic yards of sediment on an annual basis. Given the finite volume of sediment available at the on-island sand pit, the Department is concerned about the long-term sustainability of this nourishment program. This concern is heightened when consideration is given to a potentially larger project, such as the previously proposed 4000-foot long rock revetment. As a result, the proponents should begin an evaluation of sediment sources for future beach nourishment purposes.

The ENF proposes certain project failure criteria such as: failure to provide the required beach nourishment, or to conduct the required shoreline and post-storm monitoring, or to repair and/or replace the geotextile tubes in a timely manner, or excessive changes to adjacent shorelines that can be attributed to the project. In addition, the proponents have proposed failure criteria to include the failure to maintain adequate beach width in front of the geotextile tubes. Specifically, the proponents have proposed “that failure could be deemed to occur if the beach width in the project area is reduced where the long-term position of the High Tide Line (defined for this purpose as the most seaward high tide location within any two consecutive semi-annual surveys) migrates landward to the location of the seaward edge of the second tier of geotextile tubes.” The Department finds the goal of maintaining adequate beach width in front of the Geotubes commendable but also probably necessary to avoid the premature failure of the Geotubes themselves. In the event of project failure, the proponents claim that the Geotubes are readily removable and have set aside \$150,000.00 in an escrow account for project removal.

The Department will evaluate the preferred alternative and other alternatives outlined in the ENF prior to the issuance of a SOC. In the Department’s judgment, there is adequate information for that review and any remaining project details can be addressed through the permitting process.

#### Bureau of Waste Site Cleanup

Based upon the information provided, the Bureau of Waste Site Cleanup (BWSC) searched its databases for disposal sites and release notifications that may have occurred within and around the proposed project area. A disposal site is a location where there has been a release to the environment of oil and/or hazardous material that is regulated under M.G.L. c. 21E, and the Massachusetts Contingency Plan [MCP – 310 CMR 40.0000].

The proposed project involves coastal stabilization to protect Sconset bluff from further erosion at the toe, and prevent loss of public infrastructure (road and utilities). There are no listed disposal sites located at or within one mile of the proposed project area. The MCP compliance status of BWSC disposal sites may be viewed using the BWSC Waste Sites/Reportable Release Lookup at:

<http://public.dep.state.ma.us/SearchableSites2/Search.aspx>

The Project Proponent is advised that if oil and/or hazardous material are identified during the implementation of this project, notification pursuant to the Massachusetts

Contingency Plan (310 CMR 40.0000) must be made to MassDEP, if necessary. A Licensed Site Professional (LSP) should be retained to determine if notification is required and, if need be, to render appropriate opinions. The LSP may evaluate whether risk reduction measures are necessary or prudent if contamination is present. The BWSC may be contacted for guidance if questions arise regarding cleanup.

*Proposed s.61 Findings*

The "Certificate of the Secretary of Energy and Environmental Affairs on the Environmental Notification Form" may indicate that this project requires further MEPA review and the preparation of an Environmental Impact Report. Pursuant to MEPA Regulations 301 CMR 11.12(5)(d), the Proponent will prepare Proposed Section 61 Findings to be included in the EIR in a separate chapter updating and summarizing proposed mitigation measures. In accordance with 301 CMR 11.07(6)(k), this chapter should also include separate updated draft Section 61 Findings for each State agency that will issue permits for the project. The draft Section 61 Findings should contain clear commitments to implement mitigation measures, estimate the individual costs of each proposed measure, identify the parties responsible for implementation, and contain a schedule for implementation.

The MassDEP Southeast Regional Office appreciates the opportunity to comment on this proposed project. If you have any questions regarding these comments, please contact Sharon Stone at (508) 946-2846.

## Patel, Purvi (EEA)

---

**From:** Coman, Amy (FWE)  
**Sent:** Tuesday, September 23, 2014 4:30 PM  
**To:** Patel, Purvi (EEA)  
**Cc:** Holt, Emily (FWE)  
**Subject:** EEA No. 15240 Baxter Road and Sconset Bluff Stabilization Project, Nantucket  
**Attachments:** Nantucket\_13-32415\_10022013.pdf

Good Afternoon, Purvi –

The NHESP of the MA DFW reviewed the Environmental Notification Form (ENF) for Baxter Road and Sconset Bluff Stabilization Project, Nantucket. The work described in the ENF is not located within Priority Habitat & Estimated Habitat according to the MA Natural Heritage Atlas, 13<sup>th</sup> Edition. The NHESP previously reviewed a larger scale stabilization project (roughly 4,000 linear feet) and the work described in the ENF (under 1,000 linear feet) appears to be a subset of what was previously reviewed. Please see the attached NHESP letter dated October 2, 2013 regarding the larger project.

The Applicant notes that the federally- and state-listed species, Piping Plover is known north of the project (and access) area and commits to managing vehicular use in accordance with the state and federal guidelines "*Guidelines for Managing Recreational Use of Beaches to Protect Piping Plovers, Terns, and their Habitats*" and "*Guidelines for Managing Recreation Activities in Piping Plover Breeding Habitat on the U.S. Atlantic Coast to Avoid Take Under Section 9 of the Endangered Species Act*" respectively. As the work described in the current ENF does not occur within Priority & Estimated Habitat, the NHESP has no additional comments on the current proposal at this time.

Please do not hesitate to call or email if any additional questions arise.

Sincerely,

Amy (Coman) Hoenig

Endangered Species Review Biologist | Natural Heritage & Endangered Species Program | MA Division of Fisheries & Wildlife  
| ADDRESS - 1 Rabbit Hill Road, Westborough, MA 01581 | tel: 508.389.6364 | fax: 508.389.7890 | [www.mass.gov/nhesp](http://www.mass.gov/nhesp)



MassWildlife

Commonwealth of Massachusetts

# Division of Fisheries & Wildlife

Wayne F. MacCallum, *Director*

October 2, 2013

Nantucket Conservation Commission  
37 Washington Street  
Nantucket MA 02554

Siasconset Beach Preservation Fund  
c/o Jenny Garneau  
18 Sasapana Road  
Nantucket MA 02554

RE: Project Location: Sconset Bluff & Baxter Road (Lot 63 – 119 Baxter Road)  
Project Description: Sconset Bluff & Baxter Road Storm Damage Prevention Project - Coastal  
Bank Stabilization  
DEP Wetlands File No.: 048-2581  
NHESP Tracking No.: 13-32415

Dear Commissioners & Applicant:

The Natural Heritage & Endangered Species Program of the Massachusetts Division of Fisheries & Wildlife (the "Division" or "NHESP") previously reviewed a *Notice of Intent*, site plans entitled "SCONSET BEACH PRESERVATION FUND SCONSET BLUFF EROSION CONTROL PROJECT" (dated 6/28/13, last revision 8/23/13) and has recently received Supplemental Submission materials dated September 6, 2013 in compliance with the rare wildlife species section of the Massachusetts Wetlands Protection Act Regulations (310 CMR 10.37). Additional materials were submitted for review pursuant to the Massachusetts Endangered Species Act (MESA; M.G.L. c. 131A) and its implementing regulations (321 CMR 10.00) (MESA).

It is anticipated that with the installation of a stone revetment along approximately ±4,000 linear feet of coastal bank, the amount of sediment within the system available to state-listed nesting shore-birds will be reduced. The Piping Plover (*Charadrius melodus*) is a state-listed as "Threatened", individuals and their habitats are protected pursuant to the MESA. The Piping Plover is also federally protected pursuant to the U.S. Endangered Species Act (ESA, 50 CFR 17.11).

The NHESP has reviewed the submitted material and while we understand the project has been revised to occur outside of Priority & Estimated habitat, there is the potential for downdrift impacts (e.g. the loss of sediment within the littoral system) as a result of the proposed project. Therefore, we concur with the Applicant's proposal to annually deliver 12 cubic yards per linear foot of sand to the revetment site and approximately 300 feet north and south of the revetment: However, the Division supports the recommendation of CZM concerning the mitigation volume (an amount of 15-26 cy/lf/yr). Therefore, the Division would support an increased mitigation volume should it be required by either the Nantucket Conservation Commission or DEP.

Should the sand mitigation/nourishment (or any associated grading or shaping of said nourishment) require access through the delineated Estimated and Priority Habitat area, then all motorized equipment shall be prohibited from the beach during April 1 – August 31.

[www.mass.gov](http://www.mass.gov)

Division of Fisheries and Wildlife

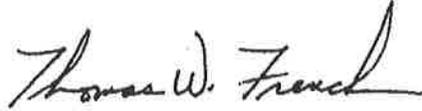
Temporary Correspondence: 100 Hartwell Street, Suite 230, West Boylston, MA 01583

Permanent: Field Headquarters, North Drive, Westborough, MA 01581 (508) 389-6300 Fax (508) 389-7890

An Agency of the Department of Fish and Game

Please do not hesitate to contact Amy Coman-Hoenig, Endangered Species Review Biologist, at (508) 389-6364 with any questions or comments you may have.

Sincerely,

A handwritten signature in cursive script that reads "Thomas W. French". The signature is written in black ink and is positioned above the typed name.

Thomas W. French, Ph.D.  
Assistant Director

---

cc: MA DEP Southeast Region  
Lester Smith, Epsilon Associates, Inc.  
Susi vonOettingen, USFWS



Paul J. Diodati  
Director

# Commonwealth of Massachusetts

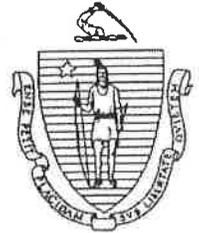
## Division of Marine Fisheries

251 Causeway Street, Suite 400

Boston, Massachusetts 02114

(617) 626-1520

fax (617) 626-1509



Deval Patrick  
Governor  
Maeve Valley Bartlett  
Secretary  
Mary B. Griffin  
Commissioner

September 9, 2014

Secretary Maeve Valley Bartlett  
Executive Office of Energy and Environmental Affairs (EEA)  
Attn: MEPA Office  
Purvi Patel, EEA No. 15240  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Dear Secretary Bartlett:

The Division of Marine Fisheries (*Marine Fisheries*) has reviewed the Environmental Notification Form by the Siasconset Beach Preservation Fund for the Baxter Road and Sconset Beach Bluff Stabilization Project along Sciasconset Beach in the Town of Nantucket. The project consists of an existing three tier geotextile tube system and a proposed fourth tube with returns. Vegetation plantings and beach nourishment are also proposed. Existing marine fisheries resources and potential project impacts to these resources are outlined in the following paragraphs.

The area offshore of the project site is mapped shellfish habitat for surf clam (*Spisula solidissima*). Subtidal waters adjacent to the project site have habitat characteristics suitable for this species. Land containing shellfish is deemed significant to the interest of the Wetlands Protection Act (310 CMR 10.34) and the protection of marine fisheries.

The area offshore of the project site also provides habitat for a variety of finfish species, including striped bass (*Morone saxatilis*), bluefish (*Pomatomus saltatrix*) and summer flounder (*Paralichthys dentatus*). The project shoreline supports a seasonal recreational surfcast fishery for these species.

*Marine Fisheries* offers the following comments for your consideration:

- The existing geotube footprint restricts shoreline access for seasonal recreational fishing activity. While apparently graded at the north and south ends to allow access past the structure, shoreline access to this immediate section of Siasconset Beach at high tide is limited.
- The proposed modifications to the existing structure include plantings above the geotubes to further stabilize the bank. The overall project should also include measures to reduce overland runoff, including vegetative buffers between lawn and bluff edge [1].
- As noted in the ENF, shoreline monitoring is an essential component of this project as it is needed to assess potential negative impacts to the downdrift shoreline that could occur

as a result of the geotube installation. The ENF refers to a long term monitoring survey, which is proposed as the model for post-installation monitoring. More details on survey design and results are required. The specific methods of the survey should be outlined and examples of past results and analyses included.

Questions regarding this review may be directed to John Logan in our New Bedford office at (508) 990-2860 ext. 141.

Sincerely,



Paul J. Diodati  
Director

cc: Nantucket Conservation Commission  
Christopher Boelke, Alison Verkade, NMFS  
Robert Boeri, CZM  
Ed Reiner, EPA  
Ken Chin, DEP  
Richard Lehan, DFG  
Kathryn Ford, Neil Churchill, Christian Petipas, DMF

#### References

1. Massachusetts Coastal Zone Management StormSmart Properties Fact Sheet 2: Controlling Overland Runoff to Reduce Coastal Erosion. <http://www.mass.gov/eca/docs/czm/stormsmart/properties/ssp-factsheet-2-erosion.pdf>.

PD/JL/sd



RECEIVED

PP

AUG 15 2014

August 14, 2014

Secretary Maeve Valley Bartlett  
Executive Office of Environmental Affairs  
Attn.: Purvi Patel, MEPA Unit  
100 Cambridge Street, Suite 900  
Boston, MA 02114

**The Commonwealth of Massachusetts**  
William Francis Galvin, Secretary of the Commonwealth  
Massachusetts Historical Commission

RE: Baxter Road and Sconset Bluff Stabilization Project, 87-105 Baxter Road, Nantucket, MA. MHC # RC.56566.  
EEA #15240.

Dear Secretary Bartlett:

Staff of the Massachusetts Historical Commission (MHC) have reviewed the Environmental Notification Form (ENF) for the project referenced above. The project includes the construction of multiple stacked rows of erosion control geotextile tubes at the base of Sconset Bluffs, and construction of associated project components, including access road, sand delivery locations, surface water runoff drain and bluff revegetation east of Baxter Road on Nantucket.

The MHC notes that project components, including the installation of three geotextile tubes and surface water runoff drain, have been completed as part of winter 2013/2014 emergency erosion control activities, and construction of additional geotextile tubing and bluff re-vegetation is proposed in the near future. Review and permitting of the project by the US Army Corps of Engineers has not been required at this time. The MHC has previously reviewed aspects of Sconset Bluff and Siasconset Beach erosion control projects (MHC # RC.9108/22076) in 2000 and 2005, that included archaeological survey within perched aquifer drainage borings east of Baxter Road.

Review of the Inventory of Historic and Archaeological Assets of the Commonwealth indicates that the project is within the Nantucket Historic District (NAN.C/D), a National Historic Landmark, which is listed in the State and National Registers of Historic Places and is also a local historic district. Previous archaeological survey in the vicinity of the project area along Baxter Road has identified archaeological sites included in the MHC's Inventory.

After review of our files and the information provided, the MHC has determined that the project as proposed will have "no adverse effect" (950 CMR 71.07(2)(b)(2)) to the historic and archaeological characteristics of the Nantucket Historic District and did not frustrate the purposes of MHC's review (950 CMR 71.11). If project plans change, then current project information should be submitted to the MHC for review and comment.

These comments are offered to assist in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (36 CFR 800) and/or Massachusetts General Laws, Chapter 9, Sections 26-27C (950 CMR 71), and MEPA (301 CMR 11). If you have any questions, please contact Jonathan K. Patton, at this office.

Sincerely,

Brona Simon  
State Archaeologist  
State Historic Preservation Officer  
Executive Director  
Massachusetts Historical Commission

- xc: Josh Posner, Sconset Beach Preservation Fund
- Karen Kirk Adams, USACOE, New England District
- Kate Atwood, USACOE, New England District
- Bettina Washington, WTGH(A)
- Elizabeth F. Kouloheras, DEP-SERO, Wetlands & Waterways
- Andrew Vorce, Nantucket Planning Board
- Kara Buzanoksi, Nantucket Department of Public Works
- Nantucket Conservation Commission
- Mark Voigt, Nantucket Historic District Commission
- Deborah Timmerman, Nantucket Historical Commission
- Maria Hartnett, Epsilon 200 Motor Inn, Boulevard, Boston, Massachusetts 02125

(617) 727-8470 • Fax: (617) 727-5128

www.sec.state.ma.us/mhc



September 29, 2014

Ms. Purvi Patel  
Executive Office of Energy and Environmental Affairs  
Attn: MEPA Office  
100 Cambridge Street, Suite 900  
Boston, MA 02114

PRINCIPALS

Theodore A Barten, PE  
Margaret B Briggs  
Michael E Guski, CCM  
Dale T Raczynski, PE  
Cindy Schlessinger  
Lester B Smith, Jr  
Robert D O'Neal, CCM, INCE  
Andrew D Magee  
Michael D Howard, PWS  
Laura E Rome  
Douglas J Kelleher  
A.J Jablonowski, PE

Samuel G Mygatt, LLB  
1943-2010

ASSOCIATES

Stephen H Slocomb, PE  
Maureen A Cavanaugh  
David E Hewett, LEED AP

**Subject: Responses to Comments Received on ENF for EEA 15240,  
Baxter Road and Sconset Bluff Stabilization Project, Nantucket, MA**

Dear Ms. Patel:

On behalf of the Sconset Beach Preservation Fund (SBPF), please find a response to the comments received on the Environmental Notification Form (ENF) for the Baxter Road and Sconset Bluff Stabilization Project in Nantucket, MA. Each comment is quoted in italics, or paraphrased where appropriate, followed by a response. We have responded to these comments in an attempt to be comprehensive and to assist the MEPA office in its review of the project. Most issues raised in the comments have been addressed within the ENF and where possible we have provided a reference to the appropriate section within the ENF. SBPF continues to believe that any outstanding issues are both limited and able to be resolved through the permitting process. SBPF believes this position is consistent with the comments received on the project from state agencies, as none of the commenting state agencies (Department of Environmental Protection, Office of Coastal Zone Management, Massachusetts Historical Commission, Division of Marine Fisheries) specifically requested an Environmental Impact Report.

**Department of Environmental Protection (September 23, 2014)**

1. *"The ENF's alternative analysis should have separated the "No Action" alternative from the "Retreat" alternative."*

Response: SBPF is willing to provide any additional information on alternatives needed by DEP. As noted in DEP Comment #4, SBPF believes any additional information can be provided during the permitting process.

2. *"...the proponents (SBPF) will need to secure permission from the Town prior to any additional work at the project site."*

3 Clock Tower Place, Suite 250  
Maynard, MA 01754  
www.epsilonassociates.com

978 897 7100  
FAX 978 897 0099

Response: SBPF acknowledges this requirement and will not perform any work without permission from the Town. As included in Attachment F to the ENF, SBPF already has an MOU and License agreement in place with the Town on this issue.

3. *"...the proponents should begin an evaluation of sediment sources for future beach nourishment purposes."*

Response: SBPF's analysis of on-island pits has indicated that the pits contain enough sediment for over 20-40 years. Nonetheless, SBPF has previously conducted reviews of available on-island and off-island sediment sources for previous projects. Within the near-term (probably within the next year or two), SBPF intends to update these reviews and will seek any necessary approvals for a different sediment source at that time.

4. *"The Department will evaluate the preferred alternative and other alternatives outlined in the ENF prior to the issuance of a SOC. In the Department's judgment, there is adequate information for that review and any remaining project details can be addressed through the permitting process."*

Response: SBPF is committed to working with DEP on any remaining project details and agrees that an EIR is not required to accomplish this.

5. *"The Project Proponent is advised that if oil and/or hazardous material are identified during the implementation of this project, notification pursuant to the Massachusetts Contingency Plan (310 CMR 40.0000) must be made to MassDEP, if necessary."*

Response: SBPF will follow appropriate procedures and will seek guidance from an LSP in the event oil and/or hazardous material are identified.

6. *"[If an EIR is required]...the Proponent will prepare Proposed Section 61 Findings to be included in the EIR in a separate chapter updating and summarizing proposed mitigation measures."*

Response: See response to DEP #4 above.

#### Office of Coastal Zone Management (September 23, 2014)

1. *"[For the returns,] CZM typically recommends that softer options that reflect less wave energy be considered (e.g. sand-filled coir bags and nourishment). The end*

*scour protection should also taper in elevation and slope to minimize the amount of reflected wave energy and the amount of associated erosion.*

Response: SBPF has conducted a preliminary analysis of this comment and believes it may be possible that a revised return design could be developed to include a taper in elevation and slope and/or softer materials. SBPF believes this design detail could best be evaluated in consultation with DEP during the SOC review process.

*2. "CZM recommends that [the monitoring] be increased to quarterly monitoring, which is consistent with other shore protection projects in this area. CZM also recommends that the monitoring reports be distributed within 30 days of data collection to help inform timely decisions regarding the need for any additional mitigation."*

Response: SBPF agrees that prompt distribution of the monitoring reports is important to inform timely decisions. Based on coordination with the firm that performs the surveys, SBPF suggests that distribution of the reports within 30-60 days of data collection is a reasonable timeframe. SBPF considers semi-annual monitoring (spring and fall) to be sufficient but will also further evaluate the monitoring frequency; SBPF believes this can be evaluated in consultation with DEP during the SOC review process.

#### **Division of Marine Fisheries (September 9, 2014)**

*1. "The existing geotube footprint restricts shoreline access for seasonal recreational fishing activity. While apparently graded at the north and south ends to allow access past the structure, shoreline access to this immediate section of Siasconset Beach at high tide is limited."*

Response: Public access is described in Section 5.6 of the ENF. As noted in that section, the geotextile tubes are located at the back of the beach, such that there will be access for beachgoers or recreational fishermen in front of the geotextile tubes during most weather conditions. The As-Built survey included in Attachment C to the ENF shows that there is a distance of over 50 feet between the High Tide Line elevation and the edge of the geotubes (based on an April 2014 shoreline survey). Therefore, especially in the summer, it is expected that beach access in front of the geotextile tubes will generally be available. During the past summer there were no days when the fronting beach was not wide enough to walk, swim or fish in front of the geotextile tubes. It should also be noted that Sconset Beach in the area of the

geotextile tubes is rarely used. Use consists primarily of occasional beach walkers, estimated at a few per week in the summer.

2. *"The overall project should also include measures to reduce overland runoff, including vegetative buffers between lawn and bluff edge."*

Response: SBPF concurs with the need to reduce overland runoff. The use of a surface water drain is described in Section 4.4.6 of the ENF. Additionally, while not within the scope of the current ENF, it is recognized that Baxter Road may be a significant source of overland runoff and the Town of Nantucket DPW is seeking to address this situation.

3. *"As noted in the ENF, shoreline monitoring is an essential component of this project as it is needed to assess potential negative impacts to the downdrift shoreline that could occur...More details on [the long term monitoring] survey design and results are required. The specific methods of the survey should be outlined and examples of past results and analyses included."*

Response: The results of the monitoring surveys performed on behalf of SBPF have been submitted to various local, state, and federal regulatory authorities, including DEP, CZM, and the local Conservation Commission, for years. These reports include the specific methods of the survey and analyses of shoreline and volume change. This monitoring program is one of the most comprehensive of any such program in Massachusetts.

#### **Town of Nantucket and Nantucket Conservation Commission (September 23, 2014)**

1. *"The project currently under MEPA review is clearly a segment of a larger project and should not be allowed to proceed to a State permitting phase without requiring an Environmental Impact Report."*

Response: A memo on project segmentation was submitted to the MEPA office on September 4, 2014 date and is attached. This memo and analysis concludes both that (1) there has not been "segmentation" (based on a legal analysis and a review of the MEPA regulations) and (2) there is a critical need for the project to proceed to permitting so that appropriate conditions related to maintenance, monitoring, and mitigation for the existing project can be put into place.

*2. "In summary, the main problem with the project as currently designed concerns the volume and timing of sediment/sand supply from the coastal engineering structure not accurately replicating the natural function of the coastal bank. The softer project alternatives, such as a hybrid structure involving jute or coir components... may possibly involve a higher cost and more intensive maintenance protocol, they are certainly feasible alternatives which would better replicate the natural functioning of an otherwise naturally eroding coastal bank."*

Response: The project includes a substantial mitigation volume of 22 cy/lf/yr, which is equivalent to 1.5 times the average volume of sediment eroded annually from the coastal bank. (For further justification that the 22 cy/lf/yr is equivalent to 1.5 times the average annual bank contribution rate, see below Responses to the Nantucket Land Council #4.) The 22 cy/lf/yr volume represents the **minimum** volume that will be provided as mitigation on an annual basis; SBPF has stated it will add additional sand if a replenishment trigger is met, with no maximum limit. SBPF therefore strongly disagrees with the assertion that the project is "insufficiently mitigated." To our knowledge, there is no other coastal bank protection project on Nantucket or in Massachusetts required to provide 1.5 times the average annual coastal bank contribution volume as mitigation.

SBPF has also fully assessed the alternative of using jute/coir bags in Section 6.3.2 of the ENF, which describes how the failure of the jute bags caused the loss of nearly 30 feet of coastal bank during the winter of 2012-2013 at 79 Baxter Road. The jute bags provide some protection during certain storms but will release all their sand and leave the bank completely vulnerable during major, successive, or multi-day storm events. The project area does not have the capacity to absorb a 30 foot loss of bank, so this option is clearly not feasible.

Notwithstanding the documented failure of jute/coir to protect the coastal bank, the Conservation Commission indicated that jute/coir were preferable due to their purported slower release of sand during storm events and the associated reduction in wave energy and storm damage. This purported benefit is both (1) minimal and (2) not exclusively dependent upon the use of jute/coir material.

- First, a 30' circumference jute/coir tube can hold a little more than 1 cy of sand per linear foot. This amount is minimal in comparison with the overall mitigation volume of 22 cy/lf. Any small benefit

offered by this volume is strongly offset by the certain failure of the bank during major, successive, or multi-day storm events.

- Second, the two purported benefits of providing sand continuously during a storm are not exclusively dependent upon the use of jute/coir material. The purported benefits of providing sand continuously during a storm are to: (1) reduce storm wave energy and (2) reduce damage to downdrift areas. On the first point, sand can be provided, and indeed is provided, to the water column during storms from offshore sand sources, from longshore sediment transport, and from the mitigation template (which would take a major storm to be completely exhausted). When considered in the context of the overall coastal setting, the potential volume of sand to be contributed by a jute/coir tube is both insignificant and unnecessary to realize the purported benefit of reducing storm wave energy. On the second point, SBPF has provided information in Section 5.2.2 of the ENF that indicates that the mitigation sediment is even more available to the littoral system than the existing coastal bank. During the March 27 storm, more sand (1.5-2.5 cy/lf) eroded from the sand template than from the jute terraces or unprotected bank (0.25 cy/lf/yr). This "over contribution" during small or moderate storm events can be expected to reduce damage to downdrift areas during major storms. Likewise, this regular "over contribution" can be expected to offset any limited times when the sand template has been completely exhausted; this condition is only expected to be reached at the end of a major storm that occurs only every few years. As previously stated, SBPF intends to promptly re-grade and, if necessary, replenish the sand template after any significant storm activity.

Finally, the use of jute/coir terraces in any part of the project design poses insurmountable maintenance considerations and would result in less sand being available to the littoral system. First, heavy equipment is needed to drive on top of the sand template to spread the substantial volume of the mitigation sand. Engineering analyses included in the ENF at Attachment O suggest that the coir or jute could not support the required equipment loading. Second, maintenance of any jute/coir tubes cannot be done without significantly interrupting the availability of the sand template. It can be expected that the jute/coir tubes would require repair and/or replacement

after a major or multi-day storm; such a storm is likely to have eroded much of the sand template, especially the seaward face. Repair and/or replacement of a 900 foot length of jute/coir tubes would likely take weeks to accomplish. During this weeks-long effort, the depleted sand template could not be re-graded and replenished from the top and would not be available to the littoral system. In contrast, with the geotextile tubes, SBPF intends to inspect and re-grade the sand template by pushing sand from the top of the template onto the seaward face of the template (and more sand can also be added from the top of the bank via conveyor belt if needed); this effort is relatively straightforward and can be accomplished within just a few days. This extreme disadvantage of disrupting the availability of the sand template for the time-consuming process to rebuild one or more jute/coir tubes clearly outweighs the very minimal benefit, if any, provided by jute/coir.

In summary, the purported benefits of a jute/coir tube are minimal and are compensated for by the substantial mitigation volume. The disadvantages associated with jute/coir are insurmountable: (1) maintenance of jute/coir would necessitate a weeks-long repair effort, during which time the depleted sand template could not be re-graded or replenished and would not be available to the littoral system; (2) coir/jute will certainly fail during major, multi-day, or successive storms, and the project area cannot absorb additional bank loss. For all these reasons, the use of coir/jute continues to be considered infeasible.

3. *“...the project proponent's conclusory claim of no feasible alternative projects is particularly suspect in light of the project proponent's own contradictory statement that the geotube project for which it now seeks approval was not a viable long term solution when it was seeking approval for the rock revetment armoring project.”*

Response: This comment refers to a July 2013 Notice of Intent for the rock revetment proposal that is not within the scope of the current MEPA review. At that time, SBPF indicated that geotextile tubes were not a preferred alternative when compared to the rock revetment, since a rock revetment is generally recognized as more robust than geotextile tubes. The ENF describes in Section 3.1 how the imminent approach of the 2013-2014 winter storm season necessitated the selection of an alternative that could be both permitted and constructed within the available timeframe, which precluded the further pursuit of a revetment proposal. The various alternatives evaluated for the emergency project are discussed in Section 6.3

of the ENF. SBPF believes the current design of the geotextile tube system will provide the required protection and has been impressed at the strength and performance of the geotextile tubes since installation. SBPF intends to continue evaluating the performance of the existing geotextile system.

4. *"...following the meeting conducted by MEPA officials at the office of MassDEP in Lakeville on September 5, 2014, the Commission offered to discuss alternate project proposals with SBPF in the context of agreed public remand proceedings. SBPF has declined this offer."*

Response: This is not accurate. The Commission's representatives did not make such an offer at the September 5, 2014 meeting. At that meeting, Town Counsel asked SBPF grant a two week extension of the comment period so that settlement options might be explored with both clients. On Tuesday September 9th, SBPF granted the extension and informed Town Counsel that if the Con Com was willing to engage in a settlement discussion that involved a viable alternative that would adequately protect the bluff, road, and houses, then SBPF would have engineers assess the ideas raised. On September 18, 2014, Town Counsel informed SBPF that the Con Com would not engage in settlement discussions of the pending appeal but would be willing to review new proposals from SBPF in an agreed public remand hearing, effectively ending the appeal. This suggestion was not consistent with the terms discussed at the September 5th meeting, but rather was a unilateral alteration of the terms, with no real offer concerning the key issues. Before SBPF could respond, a few days later Town Counsel submitted its comment letter to MEPA, and asserted that its "offer" had been rejected, even though there had been no contact with or from SBPF about it.

#### **Nantucket Land Council (September 22, 2014)**

1. *"[T]he smaller-scale 900-foot project only represents a portion (i.e. segment) of the proposed armoring of the Sconset Bluff by SBPF."*

Response: See above Response to Town of Nantucket #1.

2. *"From the photographic evidence, it is clear that violations [work below MHW] took place. "*

Response: Attachment N to the ENF provides a response to the letter attached by the Nantucket Land Council. This attachment notes that the

Mean High Water (MHW) elevation is a statistical average, so it can be expected that the actual high tide water levels on any given day can be higher than this set elevation. Additionally, it is notable that the MHW line is representative of a stillwater elevation and does not include the effects of wave runup or setup. Both wave runup and setup contribute to the visible elevation that the water reaches on a coastal beach, even during calm, non-storm conditions. Therefore, the actual position of the MHW line on the beach is best determined by a surveyed elevation and any attempts to identify the MHW line without a survey are speculative at best and likely subject to significant inaccuracies. None of the photographs submitted by the NLC include surveyed stakes. In contrast, Attachment N includes photographs that provide surveyed evidence that the wet/dry interface does not correspond to the MHW line, and is located landward of the MHW line. Therefore, the photographs attached by NLC showing equipment and a sand berm near the wet/dry interface do not demonstrate that work was occurring seaward of the MHW line. Such a demonstration can only be definitively made with surveyed stakes. Further, Attachment N includes photos of the initial work with surveyed stakes demonstrating that work was above the High Tide Line (the MHW line is several feet *seaward* of the High Tide Line), and describes how work was at its most seaward location at the time the photographs were taken in December 2013. The Department, after careful consideration of data presented by SBPF and NLC, has made no finding that work occurred seaward of the MHW line.

For any future work on the project, SBPF would mark the MHW line with surveyed stakes or other means throughout the duration of construction, so that any future work could clearly be documented as occurring landward of the MHW line.

*3. "It is clear that the two applicants for this Notice of Intent have very different goals and objectives for the proposed project.... It is unclear whether this proposal should be considered temporary or permanent."*

Response: The Temporary/Permanent issue has been significantly misunderstood and grossly misrepresented by opponents of the project. The Town and SBPF do not have the same interest here, but both have been very clear about this issue. When SBPF applied for the approximately 4000 linear feet of rock revetment as a permanent structure, the Town was an assenting land owner, but not a co-applicant. When it later became

apparent that the revetment project would not be approved and constructed before the 2014 storm season, the Town and SBPF applied as co-applicants for a temporary and shorter project to protect the most vulnerable and endangered sections of the bluff with removable geotubes. Not surprisingly, these are the areas where many of the houses have been lost and the road is in imminent danger. The shorter geotextile tube applications have consistently been represented as seeking approval for temporary protection, from 3-6 years. This timeframe will allow a long-term protection project to be identified and implemented.

In response to questions from the Commission, the DPW has also indicated that it believes that it would take about the same amount of time to undertake actions necessary to be prepared for relocated access and utilities necessary to mitigate the imminent threat to public health and safety, as recognized by the Town and the Commission. While it is true that if the relocation of the road and utilities may mitigate the public health and safety issue, the Board of Selectmen have been clear that this relocation should only occur if bluff protection is not successful. Moreover, the offers from SBPF and the land owners to cooperatively provide land for a new road and utilities (rather than forcing the Town to use the far more controversial process of Eminent Domain) have always stated that access to the needed land is only available on a back-up basis in the event that bluff protection fails. Therefore, it is clear that the project which is the subject of review can be expected at some point to be superseded by another as yet unspecified project. The erosion problem is not temporary, and a long-term protection project will ultimately be needed.

4. *"The top of coastal bank retreat rates that SBPF reports have been proven to be inaccurate and underestimate the volume of material being lost..."*

Response: The Nantucket Land Council reviews several past calculations and suggests that the current mitigation volume calculation is inaccurate. Though not clearly stated in their letter, the NLC makes two assertions and assumptions when citing other data sources to determine a mitigation volume. Each of these two assertions contain technical flaws, which are explained in detail (and, where possible, corrected) in Attachment H to the ENF:

(1) NLC asserts that the mitigation volume should include the entire coastal profile out to the "depth of closure" (i.e., the seaward limit of the littoral zone), an assertion that is inconsistent with state policy. The NLC refers to the CP&E report from 1995-2005 and states that this report indicates the mitigation volume should be 24.2 cy/lf. The CP&E report, however, calculated sediment transport rates out to the depth of closure at -26 MLW. In other words, the values presented in the CP&E report account for the entire volume of sand moving in the littoral system from the top of the bluff out to elevation -26 MLW, which is located approximately 1,500 feet offshore. The state guideline for mitigation, as presented by CZM, is that the mitigation volume should be "*based on calculation of the long-term average annual erosion rate of the coastal landform at the site*" (Massachusetts Office of Coastal Zone Management Guide – October 2011, page 24). Clearly a project that is protecting a coastal landform needs to replicate the volume that would have eroded from the landform itself, not the entire volume of sediment within the littoral system from the top of the landform out to over one thousand feet offshore. Attachment H presents an update to the CP&E analysis that calculates just the coastal bank component of the sediment budget (this analysis also uses updated shoreline rates and was done specific to the emergency project area); this revised calculation indicates a mitigation volume of 11.4 cy/lf, which is less than the 14.3 cy/lf calculated bank contribution volume, and is substantially less than the 22 cy/lf proposed mitigation volume.

Likewise, the NLC letter refers to the Notice of Intent for the marine mattress and gabion project proposed by SBPF in 2011-2012. This marine mattress and gabion project also included calculations of sediment volumes out to the depth of closure. The coastal bank contribution values for the gabion project, as presented in Attachment H to the ENF, were 11.6 cy/lf for the northern segment and 7.5 cy/lf for the southern segment. Both of these volumes are lower than the 14.3 cy/lf calculated as the bank contribution volume for the emergency geotextile tube project. These differences are due to the following (1) the bank contribution volume is calculated specific to the emergency project area, which has experienced much greater bank erosion than some of the more southern sections included in the mattress and gabion project, and (2) the significant erosion of 2012-2013 (which hadn't occurred when the bank contribution rates were calculated for the marine mattress and gabion project) caused a marked increase in the overall average bank contribution volume.

(2) The NLC asserts that the shoreline change rate is representative of the coastal bank retreat rate, which survey data shows is incorrect. NLC cites both (1) an 2010 OCC analysis of shoreline change rates (from the period of 1994-2009) for an area to the south of the current project area and (2) the CZM comment letter which provides an analysis of shoreline change rates from 1978-2009. As listed in Attachment H of the ENF, the Sconset shoreline and beyond (from the Sewer Beds at the south to Wauwinet at the north) have been carefully monitored on a quarterly or semi-annual basis for nearly twenty years, yielding an impressive record of highly-accurate data. This monitoring has consistently shown that shoreline erosion rates in areas where the coastal bank is fronted by dunes are *significantly higher* than shoreline rates in areas with an eroding coastal bank. (This observation is as expected, since an eroding dune contributes less to the littoral system than an eroding bank.) In other words, survey data show that the shoreline change rates in areas fronted by dunes are *not representative* of the coastal bank retreat rate. Rather, the shoreline change rate and coastal bank retreat rate may only begin to approximate one another after the coastal dune and any vegetated portion of the coastal bank have completely eroded and sufficient time has passed for an equilibrium to be reached. The coastal dune in the Project area was still present during much of the 1978-2009 time period; therefore, CZM's suggestion to use a 1978-2009 shoreline change rate to approximate coastal bank retreat fails to consider the coastal setting at Sconset and is not technically valid. Likewise, NLC's suggestion to use OCC's quoted shoreline change rate of 8 feet/yr from 1994-2009 to approximate coastal bank retreat (an approach which was not included by OCC in their report) is similarly flawed – especially since the study area included in the 2010 OCC report includes areas currently fronted by a dune.

Finally, NLC cites the 2010 OCC report and indicates that this report lists a bank contribution volume of 20.7 cy/lf. This appears to be in error, as the OCC report indicates a bank contribution volume of 7.6 cy/lf/yr in Section 3.10 (attached).

In conclusion, Attachment H to the ENF details how we calculated the bank contribution rate and compares it to other calculations. In all instances where calculations of bank contribution volume are compared (and not volumes of the entire coastal profile that includes all sediment from the top of the coastal bank to approximately 1,500 feet offshore), the current bank contribution volume of 14.3 cy/lf/yr is the highest volume calculated. This

is because this calculation is done specific to the emergency project area (which has some of the highest bank erosion rates) and because this calculation includes the significant 2012-2013 erosion, which causes an increase in the average bank contribution volume. Further, the bank retreat rate was corroborated by actual shoreline change data, and the bank contribution volume was corroborated by actual bank survey data. Finally, even though we have demonstrated that the average bank contribution volume is 14.3 cy/lf/yr, the actual mitigation volume is a minimum of 22 cy/lf/yr.

5. *"Exposure of the front face of the geotubes prevents sediment supply to downdrift beaches."*

Response: The ENF at Section 5.2.2 describes how, during the March 27 storm, the sand template in front of the geotextile tubes was eroded, as expected. The sand template contributed more sand (estimated at 1.5-2.5 cy/lf, based on the post-storm inspection) than either the jute/coir terraces or the natural bank (estimated at 0.25 cy/lf) demonstrating that the mitigation sediment was supplied to the system as intended. It should be noted that exposure of the geotextile tubes post-storm does not indicate a lack of project performance; it indicates that the sediment template has eroded as expected. After each storm, SBPF intends to inspect and re-grade the sand template by pushing sand from the top of the template onto the seaward face of the template (and more sand can also be added from the top of the bank via conveyor belt if needed); this effort is relatively straightforward and can be accomplished within just a few days. Additionally, the ENF at Section 5.2.2 details the wave runup height associated with different size storms. In general, larger storms will have larger runup elevations, eroding more of the sand template; smaller storms will reach lower elevations and erode less sand. This pattern is similar to natural conditions. Finally, SBPF will perform post-storm monitoring (as detailed in Section 5.4 of the ENF) after every significant storm. SBPF intends to work cooperatively with the appropriate regulatory authority(ies) to utilize the results of the post-storm monitoring to determine if any adjustment to the template placement is required.

6. *"[T]he proposed monitoring, as planned, cannot determine the causes of erosion on adjacent shorelines."*

Response: SBPF believes it would be appropriate to develop a clear framework detailing how the monitoring data will be analyzed and how adverse impacts will be discerned. As described in the ENF, such monitoring will include both shoreline monitoring and monitoring of adjacent sections of the bank, which will provide information on the volume of sediment being contributed by the unprotected bank and will provide a useful check on the mitigation volume. SBPF believes this framework is best developed in consultation with DEP through the SOC review process.

7. *"According [to] 310 CMR 10.30 (3) vacant lots are not eligible for protection with coastal engineering structures, nor is any form of infrastructure."*

Response: Section 7.2 of the ENF (and Figure 4) describes how the Project area includes pre-1978 homes on both the landward and seaward sides of Baxter Road. Additionally, as explained in Section 7.2 of the ENF, protection of essential public infrastructure is a means of protecting the pre-1978 buildings. To protect the infrastructure and the pre-1978 homes (on either side of Baxter Road) it is necessary to include protection for any so-called "vacant lots" seaward of Baxter Road in the project area.

8. *"[T]he applicant has demonstrated that another method [sand-filled terraces] of protecting these buildings is feasible..... If, however, the design was implemented with additional nourishment in the volumes proposed to mitigate the geotubes, the system would require much less maintenance and stand up to more severe storms."*

Response: The alternative of using jute/coir bags is fully assessed in Section 6.3.2 of the ENF, which describes how the failure of the jute bags caused the loss of nearly 30 feet of coastal bank during the winter of 2012-2013 at 79 Baxter Road. As has repeatedly been explained, the jute bags provide some protection during certain storms but will release all their sand and leave the bank completely vulnerable during major, successive, or multi-day storm events. The Project area does not have the capacity to absorb a 30 foot loss of bank, so this option is clearly not feasible. In light of the demonstrated failure of the jute terraces, NLC suggests that the placement of unconsolidated nourishment material will allow the terraces to "stand up to more severe storms." During severe storms, unconsolidated sediment will be eroded and the terraces will become exposed and deflated, allowing erosion and collapse of the bank. The serious disadvantages and minimal

benefit, if any, associated with the jute/coir option are fully described above under #2 in the Response to the Town of Nantucket section.

9. *"The applicant has also not met the burden of proof to demonstrate compliance with 310 CMR 10.30 (7)."*

Response: As explained in Section 7.2.1 of the ENF, in its December 10, 2013 Emergency Certification (Attachment J to the ENF), MassDEP clearly indicated that 310 CMR 10.30 (3) and 310 CMR 10.30 (7) are read together, as 310 CMR 10.30 (3) states that a coastal engineering structure "shall be permitted" to protect pre-1978 homes from storm damage. In previously permitting the Project in its Emergency Certification, MassDEP has already recognized that by complying with 310 CMR 10.30 (3), SBPF is also in compliance with 310 CMR 10.30 (7).

**Dirk Gardiner Roggeveen on behalf of Quidnet Squam Association (QSA)  
(September 19, 2014)/ QSA Citizens Letter (September 23, 2014)**

1. *"The required EIR must address project segmentation by providing information on the current conditions and anticipated impacts for the full 4257-foot proposed structure ...."*

Response: See above Response to Town of Nantucket #1.

2. *"The EIR must address the potential impacts on several state-identified, state-managed, and state-regulated interests in close proximity to the project to the north and south", including: Piping Plover and Least Tern nesting area, Sesachacha Pond, Sconset Wastewater Treatment Plant, and Great Point Lighthouse.*

Response: The ENF describes in Section 5.3 how SBPF is conducting shoreline monitoring from the Town Sewer Beds at the south to Wauwinet at the north – a distance that spans several miles of shoreline. This monitoring has been ongoing on a semi-annual or more frequent basis for 20 years. As part of this ongoing survey effort, three additional transects were added in the Quidnet Squam area in accordance with a request from the Quidnet Squam Association. This is an extremely comprehensive monitoring program that will allow an informed assessment of project impacts.

3. *"The EIR must also address the thousands of vehicle trips which are required by the project, in this case heavy trucks along both state roads and small local roadways."*

Response: MEPA jurisdiction for this project is considered "limited" because the applicant is a private entity (not a state agency) and the project is privately funded. MEPA review is limited to subject matter of state permit, which is the Wetlands Protection Act. Further, the project does not exceed any "Transportation" review thresholds listed in the MEPA regulations; therefore, traffic is not part of the MEPA scope. Nevertheless, all truck trips will be limited to the off-season to limit impacts.

4. *"Finally, the MEPA process requires review of alternatives and the development of 'enforceable mitigation' which, QSA hopes, will be addressed through the EIR process, as it has been totally absent to date."*

Response: SBPF expects that maintenance of the sand mitigation will be a condition in any permit for the project. SBPF proposes "failure criteria" for the project in the ENF at Section 5.8, which include failure to provide the mitigation sand. As described in Section 5.8.2, SBPF has already established an escrow account that will allow for project removal if required.

5. *"Sconset Bluff provides the primary contribution of sand that supplies the beaches, and barrier beach to the north and south."*

Response. SBPF has affirmed that the bluff supplies sediment to the littoral system and has provided mitigation in the amount of 1.5 times the average annual bluff contribution volume; however, the statement that Sconset Bluff is the "primary" source of sand for beaches located miles to the north and south is misguided. The littoral system is a complex and temporally variable system consisting of inputs from coastal landforms, nearshore sediments from adjacent beaches, and offshore shoals. This littoral system or cell, includes and is limited to the eastern shore of Nantucket. A review of CZM shoreline change data from the 1800's shows that beaches within and to the north and south of the project area exhibit highly variable patterns of erosion (i.e., indicating they are net contributors of sediments to the littoral system) to accretion (i.e., indicating they are net accumulators of sediments from the littoral system). Sconset Bluff is only one component of this larger, temporally variable littoral system. Crucially, Sconset Bluff only began

eroding in the 1990's, centuries or - more likely - millennia after the landforms and beaches on the eastern side of Nantucket were established. In conclusion, the littoral system on eastern Nantucket is complex and includes many inputs that vary with time; Sconset Bluff is only one of these many inputs and has only recently (since the 1990's) started supplying sediment; and the project includes a substantial mitigation volume equal to 1.5 times the average annual bank contribution volume amount to account for this contribution.

**D. Anne R. Atherton (September 22, 2014)**

1. *The Alternatives Analysis included in the July 2013 Revetment NOI stated that "geotextile tubes are not well-suited to a high-energy environment like Sconset."*

Response: See above Response to Town of Nantucket #3.

2. *"...relocation of Baxter Road is now a viable option"*

Response: The suggestion that relocation of the road is now viable is misleading. The relocation of the road has always been an option. The only thing that has changed is that it may be able to be accomplished without the Town using Eminent Domain powers. However, the agreement being discussed with the Town is for a post-failure replacement of the road and utilities, not for abandonment of the road and utilities. The ability to move the road may mitigate the access and utility issues, but does nothing to protect the pre-1978 houses; it may lessen the public health emergency, but it does not address the erosion problem.

3. *The ConCom's denial is consistent "with the best practices of coastal management advocated by the Commonwealth through its Office of Coastal Zone Management (CZM)."*

Response: In Section 7.0, the ENF addresses compliance with the Wetlands Protection Act Regulations (310 CMR 10.00) which is the appropriate state review for the MEPA process, as the project is under review for an Superseding Order of Conditions by MassDEP. The Conservation Commission is responsible for implementing the Wetlands Protection Act and the associated state and local regulations; the project has demonstrated its consistency with these regulations in Section 7.0 of the ENF. While the

Ms. Purvi Patel  
MEPA Office  
September 29, 2014

18

project is not subject to CZM's federal consistency review, the project's consistency with CZM's enforceable program policies is detailed in Attachment E to the ENF.

Please do not hesitate to contact me with any questions by email ([mhartnett@epsilonassociates.com](mailto:mhartnett@epsilonassociates.com)) or phone (410-451-9766).

Sincerely,  
EPSILON ASSOCIATES, INC.



Maria Hartnett  
Senior Consultant

*Attachments:*

- (1) Memoranda from Epsilon Associates and Goulston & Storrs, dated September 4, 2014*
- (2) Excerpt from OCC 2010 Alternatives Analysis*

## MEMORANDUM

Date: September 4, 2014  
To: Purvi Patel, MEPA Analyst  
Copy: Jim Mahala, MassDEP  
From: Maria Hartnett, Epsilon Associates  
Subject: Baxter Road and Sconset Bluff Stabilization Project, EEA No. 15240

---

On behalf of the Sconset Beach Preservation Fund (SBPF), the following memo presents additional information and analysis on whether "segmentation" (as described in the MEPA regulations at 301 CMR 11.01(2)(c)) is an issue of concern for the above-referenced project. This analysis concludes both that (1) there has not been "segmentation" (based on a legal analysis and a review of the MEPA regulations) and (2) there is a critical need for the project to proceed to permitting so that appropriate conditions related to maintenance, monitoring, and mitigation for the existing project can be put into place.

### Project Chronology

SBPF appreciates MEPA's careful review of the project and believes that the following brief overview of project chronology provides critical information in assessing whether "segmentation" has occurred. As detailed in the ENF, substantial erosion of Sconset Bluff occurred during the winter of 2012-2013, leading the Town of Nantucket and SBPF to enter into a Memorandum of Understanding (MOU) to provide immediate protection for Sconset Bluff. In accordance with the MOU, on July 3, 2013, SBPF filed a Notice of Intent for an approximately 4,000 linear foot rock revetment and other features (the "Revetment NOI"). Five public hearings were held on the revetment; however, as the 2013-2014 winter storm season approached and it became clear that there was not time to permit and install a revetment, SBPF suspended consideration of the Revetment NOI. On October 23, 2014, SBPF and the Town of Nantucket jointly filed a Notice of Intent for four tiers of geotextile tubes and other features along approximately 1,500 linear feet of a highly endangered area of Sconset Bluff from 85-107A Baxter Road ("October 2013 NOI"). Five public hearings were heard on the October 2013 NOI, but no action had been taken on the NOI by the end of the November 20, 2013 hearing.

On November 26, 2013, with the 2013-2014 winter storm season rapidly approaching, SBPF filed an Emergency Certification request for the same four tier geotextile tube system and related work, but only at the most endangered 900 linear feet of Sconset Bluff (the "SBPF Emergency Certification Request"). This was denied by the Nantucket Conservation Commission (the "Commission") and appealed to MassDEP. While MassDEP was reviewing the SBPF Emergency Certification request, the Town of Nantucket filed its own Emergency Certification Request ("TON Emergency Certification Request") for a hybrid geotextile/jute system, in which the lower two tiers were composed of geotextile tubes and the upper tiers of protection were provided by four jute tubes. This was approved by the Conservation Commission on December 4, 2013. Subsequently, the SBPF Emergency Certification Request for the four tier geotextile tube system was approved by MassDEP on December 10, 2013. In order to reconcile the conflicting emergency certifications, SBPF and the Town of Nantucket jointly filed an Emergency Certification Request on December 17, 2013 (the "Joint Emergency Certification Request") for the four tier geotextile tube project, as amended by any conditions set forth by MassDEP in its Emergency Certification. The Commission approved the Joint Emergency Certification Request on December 18, 2013 but limited it to only three tiers of geotextile tubes. The three tiers of geotextile tubes were installed within an approximate 35 day construction window in December 2013 and January 2014.

This chronology demonstrates that the existing geotextile tube project was constructed under an Emergency Certification allowing protection of the most imminently endangered section of Sconset Bluff. The size of the project area and the project materials (geotextile tubes) were selected based upon the allowable timeframe (only 30 days, later extended to 37 days) for the emergency work.

#### **MEPA Review and Project Segmentation**

On behalf of SBPF, Goulston & Storrs conducted a legal analysis on the issue of "segmentation." This analysis (attached to this memo) demonstrates that the application of the "segmentation" provision is prohibited for projects, such as the geotextile tube project, where MEPA jurisdiction is by reason of a state permit rather than by reason of the proponent of the project being a state agency or by reason of state financing for the project. While this finding strongly indicates that the "segmentation" provision is not legally applicable, the below analysis also has been prepared to review the applicability of the "segmentation" regulation if the law did not categorically prohibit its application.

The MEPA regulations provide guidance on the applicability of MEPA review to a project. Section 301 CMR 11.01(2)(c) specifically addresses "segmentation."

"In determining whether a project is subject to MEPA jurisdiction or meets or exceeds any review thresholds, and during MEPA review....the Secretary shall consider the entirety of the Project, including any likely future Expansion, and not separate phases of segments

thereof. The Proponent may not phase or segment a Project to evade, defer or curtail MEPA review...."

The "entirety of the project" is the approximately 900 linear foot geotextile tube system. This project is the complete project that was constructed pursuant to the Emergency Certification, to provide immediate protection for the most endangered section of Baxter Road and threatened pre-1978 homes. There is currently no proposal for any expansion of the geotextile tube project. As described above, a separate revetment project covering an up to an approximately 4,000 linear foot area (this was later reduced to approximately 3,400 linear feet, which partially overlaps the geotextile tube project area) was previously proposed but is currently on hold. The revetment project, which will afford longer-term protection for a longer stretch of Baxter Road, is distinct in terms of purpose, design, and covered project area from the more limited geotextile tube project.

Additionally, there has been no attempt to "phase or segment a Project to evade, defer or curtail MEPA review...." The above chronology demonstrates that the geotextile tube project was proposed for the most endangered section of Sconset Bluff given the urgent need for protection for this area and the approximate 30 day window (later extended to 37 days) allowed for construction under the Emergency Certification. Specifically, the selection of the more limited geotextile tube project was not done to "evade, defer, or curtail MEPA review;" rather, it was selected to provide the most efficient means of protecting Sconset Bluff within the allowable timeframe. Once the geotextile tube project involved a state agency action (through the Request for a Superseding Order of Conditions), the Proponent identified the need for MEPA review and promptly filed the ENF. Further, the project does not fit within any of the listed examples of segmentation in 301 CMR 11.01(2)(c).

Considering "all circumstances" (as specified in 301 CMR 11.01(2)(c)), the current geotextile tube project at Sconset Bluff is not consistent with the description of "segmentation" provided in the MEPA regulations because it is itself a distinct project constructed under an Emergency Certification with no current proposal for expansion of the geotextile tube project, and because the above chronology clearly demonstrates that the selection of a limited geotextile tube project was done to address emergency conditions within the allowable timeframe, not to "evade, defer, or curtail MEPA review." Finally, the attached legal analysis demonstrates that the application of the "segmentation" provision is prohibited for projects, such as the geotextile tube project, where MEPA jurisdiction is by reason of a state permit rather than by reason of the proponent of the project being a state agency or by reason of state financing for the project.

#### **Additional MEPA Review Beyond the ENF**

As described above, the "segmentation" provision is not applicable to the current project. Further, there is no current proposal for an expanded geotextile tube project, and the revetment NOI is

currently on hold. However, in the event of either of the following events, SBPF believes it would be appropriate to file a Notice of Project Change with MEPA: (1) if a state action for the revetment NOI is required, such as if a future Request for a Superseding Order of Conditions is made (in the event the revetment NOI is heard and denied by the Conservation Commission); or (2) if a geotextile tube project covering an area beyond the current approximately 900 feet is proposed and a state action is required for this expanded proposal, such as if a future Request for a Superseding Order of Conditions is made.

For the current approximate 900 foot geotextile tube project under review, SBPF believes that further MEPA review would not serve to avoid, minimize, or mitigate Damage to the Environment. SBPF believes that it is critical for the project to proceed to permitting so that specific details related to project maintenance, monitoring, and mitigation can be developed. Without a final Order of Conditions or Superseding Order of Conditions in place, the project does not have finalized maintenance specifications, monitoring requirements, mitigation stipulations, failure criteria, or removal procedures. SBPF is operating in good faith under preliminary monitoring and mitigation guidance received from DEP and the Conservation Commission provided as part of the Emergency Certification process, but SBPF believes it is not in anyone's interest to delay the permitting process such that these important issues are left unaddressed for months.

## MEMORANDUM

**DATE:** September 4, 2014

**TO:** Purvi Patel, MEPA Analyst

**COPY:** Jim Mahala, MassDEP

**FROM:** David Weiss  
Counsel for the Siasconset Beach Preservation Fund

**SUBJECT:** Baxter Road and Sconset Bluff Stabilization Project, EEA No. 15240

---

On behalf of the Siasconset Beach Preservation Fund (“SBPF”), Epsilon Associates, Inc. (“Epsilon”) submitted an environmental notification form (the “ENF”) with respect to a project which was the subject of a notice of intent which addressed a previously constructed Emergency Project constructed under an Emergency Certification issued by the Nantucket Conservation Commission (the “NCC”). This notice of intent was the subject of a Denial Order of Conditions from the NCC issued on June 3, 2014 and a request for a Superseding Order of Conditions (“SOC”) filed with the Massachusetts Department of Environmental Protection (“MassDEP”) on June 17, 2014. As was noted in connection with the ENF, the Project does not require any state or federal permits other than the SOC. At the conclusion of § 1.0 of the ENF, SBPF through Epsilon pointed out that the Project has already been constructed (with some additional components requested, as described in § 4.0 in Attachment A to the ENF) and it has been extensively reviewed over the course of nine months of public hearings including at least nine NCC public hearings on the NOI and three hearings to discuss an order of conditions. For these reasons, and because only a single jurisdictional permit is required for the Project SBPF believes that all environmental issues can be resolved through the SOC process and that MEPA review beyond an ENF would not serve to avoid, minimize, or mitigate damage to the environment. Indeed, since additional construction is still needed to protect Baxter Road and Sconset Bluff from storm damage (as described in § 4.0 of Attachment A to the ENF) prolonged review could result in adverse effects to the stability of the bluff, a wetland resource area.

We understand that there has been some suggestion that by reason of the MEPA ‘segmentation’ regulation (301 CMR 11.01(2)(c)) the scope of a possible EIR could in fact be made broader than SBPF has suggested. This is incorrect as a matter of law.<sup>1</sup> The Supreme Judicial Court has

---

<sup>1</sup> It is also incorrect as a factual matter: it assumes that the project is part of a larger project. It is not. See the separate analysis being simultaneously submitted on SBPF’s behalf by Epsilon Associates.

addressed precisely the question of whether the Massachusetts Environmental Protection Act permits application of 'segmentation' principles where MEPA jurisdiction is by reason of a state permit rather than by reason of the proponent of the project being a state agency or by reason of state financing for the project. The Court held in *The Villages Development Company, Inc. v. Secretary of EOE*, 410 Mass. 100, 114-15 (1991), that the answer is "no".

Specifically, the Court stated:

We recognize that, in some cases, an environmental policy, now supported by regulation, prohibits the segmentation of a project by a developer into different components in order to evade environmental review. See 301 Code Mass. Regs. § 11.16 (1987) [now set forth at section 11.01(2)(c)]. However, when the Secretary obtains jurisdiction over a project through the granting of a permit by a State agency, that policy does not apply, because, by law, the Secretary has jurisdiction only over "that part of the project" within the subject matter jurisdiction of the permit. G.L. c. 30, § 62A. The Secretary had jurisdiction in this case to require of Villages an EIR covering only the granting of the easement and its direct and indirect impacts, not the environmental impacts of Villages' entire project. To the extent that the Secretary has interpreted the above regulation as conferring on him subject matter jurisdiction over the entire project, he has exceeded the statutory limitations on his authority. (Footnotes omitted.)

Accordingly, even if it were the case that the Project were "part" of some larger project, which it is not, it is beyond the authority granted by the Act to apply principals of segmentation here, and review is limited to "that part of the project" which is within the scope of the SOC Request.

We note that although the law prohibits application of the segmentation regulation to the Project, a separate analysis is being simultaneously submitted on SBPF's behalf by Epsilon Associates which addresses what the impact of the segmentation regulation would be if the law did not categorically prohibit its application.

DSW:vmm

**SIASCONSET COASTAL BANK  
STABILIZATION AND BEACH  
PRESERVATION PROJECT  
ALTERNATIVES ANALYSIS**

**SEPTEMBER 2010**

OCC Project # 210019



Prepared for:

**SIASCONSET BEACH PRESERVATION FUND, INC.**

Prepared by:

OCEAN AND COASTAL



CONSULTANTS

**Ocean and Coastal Consultants, Inc.**

a COWI company

50 Resnik Road, Suite 201

Plymouth, MA 02360

Tel: (508) 830-1110/Fax: (508) 830-1202

[www.ocean-coastal.com](http://www.ocean-coastal.com)

More recent erosion rates were determined from a review of the Lighthouse Beach Dewatering Project, October 2009, 54th Quarterly Report with Comparisons to Baseline Erosion Rates prepared by the Woods Hole Group. Surveys have been performed within the project area quarterly since 1994. The report compared shoreline changes for three timeframes including November 1994 to October 2009, December 2001 to October 2009 and April 2009 to October 2009. For the time periods between November 1994 to October 2009 and December 2001 to October 2009, all profiles within the project area eroded at an average annual shoreline change rate of 8.2 feet per year and 3.0 feet per year, respectively. During the short 6 month period from April to October 2009, all profiles accreted with an average rate of 6.44 feet per year. This could be attributed to the large seasonal fluctuations of sediment during the summer months when beaches in the project area tend to accrete. A summary of the shoreline change data is presented in the table below.

**Table 7 - Shoreline change data summary.**

| Profile                   | Shoreline Change<br>(feet) |                                 |                     |                                 |                     |                                 |
|---------------------------|----------------------------|---------------------------------|---------------------|---------------------------------|---------------------|---------------------------------|
|                           | Nov-94 to<br>Oct 09        | Shoreline<br>Change per<br>Year | Dec-01 to<br>Oct-09 | Shoreline<br>Change<br>per Year | Apr-09 to<br>Oct-09 | Shoreline<br>Change<br>per Year |
| 89.2                      | -124.98                    | -8.33                           | -26.68              | -3.34                           | 0.35                | 0.7                             |
| 89.5                      | -124.22                    | -8.28                           | -24.82              | -3.10                           | 0.03                | 0.06                            |
| 89.8                      | -128.01                    | -8.53                           | -20.91              | -2.61                           | 4.37                | 8.74                            |
| 90                        | -128.25                    | -8.55                           | -20.45              | -2.56                           | 6.64                | 13.28                           |
| 90.6                      | -109.92                    | -7.33                           | -28.02              | -3.50                           | 4.72                | 9.44                            |
| <b>Avg (per<br/>year)</b> | <b>-123.08</b>             | <b>-8.21</b>                    | <b>-24.18</b>       | <b>-3.02</b>                    | <b>3.22</b>         | <b>6.444</b>                    |

The coastal beach at the base of the coastal bank within the project site is subject to large seasonal changes in berm elevation. OCC reviewed cross sections of surveys from 1994 to 2009 from the above referenced Woods Hole Group report in order to estimate the lowest expected beach berm elevation and determine the ideal bottom elevation of the bank stabilization structure. Based on our review of the data, the lowest expected elevation, accounting for long term erosion and accretion as well as seasonal variations, is approximately +8.0 feet MLW. In addition to this seasonal fluctuation, OCC estimated the potential for up to 3.5 feet of scour during a 50-year storm event, and up to 8.0 feet of scour for a 100-year storm event.

### 3.10. Coastal Bank Retreat

It is important to understand that the coastal processes influencing the shoreline are different than those affecting the coastal bank. Beach erosion is primarily driven by waves and tidal currents within the surf zone. Bank erosion, however, is caused by slope instability. In the case of



Siasconset, this slope instability is caused by wave run-up during storms, which erodes the bank toe. Because the coastal erosion processes are different, the beach and the bank do not recede at the same rate.

The average annual retreat of the coastal bank is required to estimate the volume of sediment that will no longer be available to the coastal system as a result of the proposed bank stabilization. This volume is the most appropriate measure required to determine the amount of sand required to nourish the beach. This approach is also the method which has previously been accepted by the Massachusetts DEP and other agencies on other projects to determine the requirements for sand nourishment.

Epsilon Associates has performed an analysis of the coastal bank retreat along the Siasconset project area utilizing aerial photographs taken over the last 15 years; specifically 1994, 2003, and 2009. The photographs were obtained from the Massachusetts Office of Geographic and Environmental Information (i.e. MassGIS), and are geo-referenced to permit direct comparison of visible changes over time. Figure 5 provides a view of the 2009 aerial photograph, overlaid with the top of bank lines from 1994, 2003, and 2009. As summarized in Table 8, Epsilon's linear regression analysis of GIS transects at 10-foot spacing along the study area indicates that the coastal bank has retreated approximately 3 feet/year on average over the last 15 years. Assuming an average bank height of 68 feet, the annual volumetric loss of the bank per linear foot is approximately  $(68 \text{ ft}) \times (3 \text{ ft}) \times (1 \text{ cy} / 27 \text{ ft}) = 7.6$  cubic yards. Accounting for the fact that approximately 13% of the sediment in the bank is fines, the annual volumetric loss should be reduced to 6.6 cubic yards per linear foot.

Therefore, while the 1,700 linear foot beach system is losing a yearly average of 7,333 cubic yards of material, the bank is supplying approximately 11,200 cubic yards. This implies that the material in the bank is indeed supplying sand to not only the beaches in the project area, but to down drift beaches as well.

In order for the bank and beach system to remain relatively stable in the project area, and to replace the amount of sand that would ordinarily be contributed by the bank through erosion 6.6 cubic yards per year per linear foot of project length should be used as a nourishment target. This assumes that no material is supplied to the beach from the bank after stabilization of the entire 1,700 linear foot project length.

**Table 8 - Coastal Bank Retreat Statistics at Siasconset from 1994 to 2009 (based on a linear regression analysis from Epsilon Associates).**

|         | TOP OF COASTAL BANK<br>RECESSION RATE (FT/YR) |
|---------|---|
| MAXIMUM | -5.05   |
| MINIMUM | -0.03   |
| AVERAGE | -2.96   |



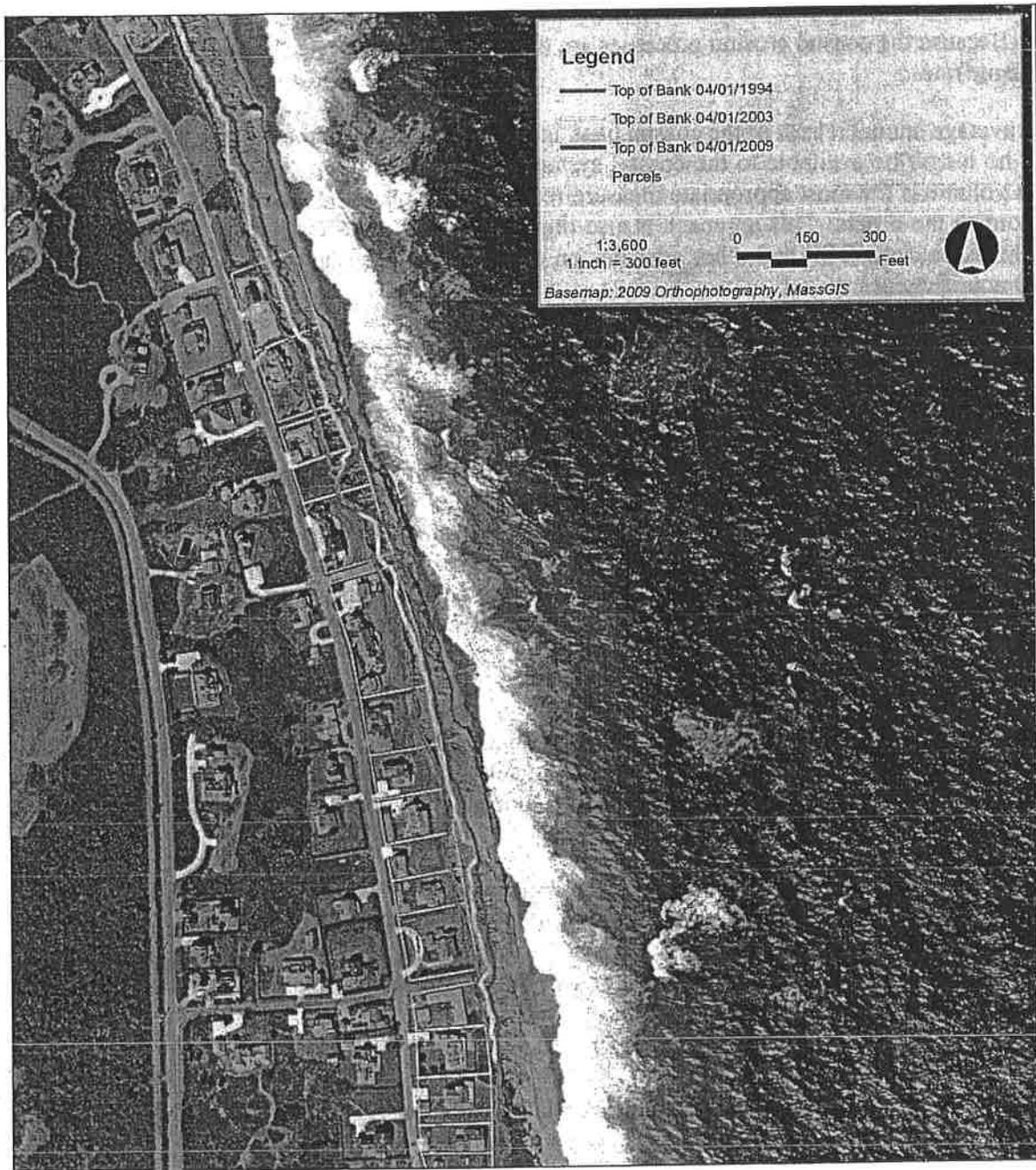


Figure 5 –Coastal Bank Retreat at Siasconset has been approximately 3 ft/yr since 1994, from GIS analysis by Epsilon Associates.



**Patel, Purvi (EEA)**

---

**From:** George Pucci [GPucci@k-plaw.com]  
**Sent:** Tuesday, September 23, 2014 4:36 PM  
**To:** Patel, Purvi (EEA)  
**Subject:** Baxter Road and Sconset Bluff Stabilization Project EEA#15240  
**Attachments:** NANT SBPF - Ltr MEPA\_001.pdf

Dear Ms. Patel –

Attached are comments to the above-referenced project submitted on behalf of the Town of Nantucket and Nantucket Conservation Commission.

Thank you very much for your time and attention to this matter.

Sincerely yours, George Pucci

George X. Pucci, Esq.  
Kopelman and Paige, P.C.  
101 Arch Street  
Boston, MA 02110  
(617) 654-1718  
(617) 654-1735 (Fax)  
[gpucci@k-plaw.com](mailto:gpucci@k-plaw.com)

This message and the documents attached to it, if any, are intended only for the use of the addressee and may contain information that is PRIVILEGED and CONFIDENTIAL and/or may contain ATTORNEY WORK PRODUCT. If you are not the intended recipient, you are hereby notified that any dissemination of this communication is strictly prohibited. If you have received this communication in error, please delete all electronic copies of this message and attachments thereto, if any, and destroy any hard copies you may have created and notify me immediately.



# KOPELMAN AND PAIGE, P.C.

*The Leader in Municipal Law*

101 Arch Street  
Boston, MA 02110  
T: 617.556.0007  
F: 617.654.1735  
www.k-plaw.com

September 23, 2014

**George X. Pucci**  
gpucci@k-plaw.com  
(617) 654-1718

BY ELECTRONIC MAIL

Purvi P. Patel, EIT  
Massachusetts Environmental Policy Act (MEPA) Office  
Executive Office of Energy and Environmental Affairs  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Re: Project Name: Baxter Road and Sconset Bluff Stabilization Project  
EEA No. 15240  
(Town of Nantucket)

Dear Ms. Patel:

As previously advised, this firm serves as Town Counsel to the Town of Nantucket (the "Town"). We submit the following comments on the above-captioned project on behalf of the Town and on behalf of the Nantucket Conservation Commission (the "Commission").

The Town and the Commission respectfully request that the Secretary issue a Certificate requiring that the project proponent, Siasconset Beach Preservation Fund ("SBPF") provide an Environmental Impact Report and that the scope of such report include an evaluation of those aspects of the project "that are likely, directly or indirectly, to cause Damage to the Environment." See 301 CMR 11.06(9). This should include evaluation not only of adverse effects of the project as currently segmented, but also a full evaluation of adverse effects of the intended larger revetment project when considered in its entirety. The scope should also require analysis of feasible alternatives to the project which would better mitigate actual or probable adverse impacts to the coastal beach and downdrift areas on the eastern shoreline of Nantucket.

A. Segmentation

301 CMR 11.01(2)(c), requires, in relevant part, as follows:

... during MEPA review, ... the Secretary shall consider the entirety of the project, including any likely future expansion, and not separate phases or segments thereof  
... the Secretary shall consider all circumstances as to whether various work or activities constitute one project, including but not limited to: whether the work or activities, taken together, comprise a common plan or independent undertaking ... and whether the environmental impacts caused by the work or activities are separable or cumulative.

Purvi P. Patel, EIT  
September 23, 2014  
Page 2

The project currently under MEPA review is clearly a segment of a larger project and should not be allowed to proceed to a State permitting phase without requiring an Environmental Impact Report.

On July 2, 2013, SBPF filed a Notice of Intent with the Commission seeking approval for a stone armor revetment extending 4,253 linear feet along the coastline. While SBPF subsequently submitted revised filings, it has not withdrawn its original filing and has not given any indication that this is not the actual project as a whole for which it will ultimately be seeking approval. Further, although SBPF also subsequently partnered with the Town to seek approval for a lesser sized project, that project is still much larger than the segment for which it now seeks to bypass review in the form of an Environmental Impact Report.

On July 5, 2013, the Town, acting by and through its Board of Selectmen, and SBPF entered into a Memorandum of Understanding ("MOU") concerning a three-phase project to address erosion control issues at Sconset Bluff. See Exhibit 1 (Memorandum of Understanding Between the Town of Nantucket and Siasconset Beach Preservation Fund, Inc. for the Design, Permitting and Construction of a Coastal Erosion Structure and for the Protection and/or Relocation of Baxter Road). The MOU was expressly based upon a determination that "certain private homes located on or near Sconset Bluff and Baxter Road, a public way, may be imminently threatened with damage and/or loss and destruction due to severe erosion of the bluff which has intensified since the Winter of 2012-2013." The MOU was also entered into by the Board of Selectmen pursuant to a determination under Chapter 67 of the Town Code, Concerning Management of Coastal Properties Owned by the Town, "that an emergency exists that threatens public roads and other assets from imminent destruction."

The MOU calls for a project in three phases, as follows:

The Project will be divided into three parts: (1) SBPF has proposed in Phase 1 the construction of a coastal erosion structure consisting of a rock revetment and reinstallation of the bluff walk for a distance of approximately 1,500 linear feet located between approximately 75 and 119 Baxter Road, as shown more specifically on the map attached hereto depicting the proposed project area and proposed phases of construction, (2) Phase 2 proposes the construction of an additional revetment to protect the remaining exposed bank on the north end in and around Phase 1 and moving south approximately 2,500 feet to the start of the eroding bank, and (3) Phase 3 includes the planning, design, permitting, and construction or relocation of Baxter Road and public utilities if it becomes necessary due to further coastal erosion.

Purvi P. Patel, EIT  
September 23, 2014  
Page 3

The MOU, recognizing that a portion of the project would be constructed on Town-owned land, called for the Town to provide SBPF with a license to permit access. The MOU also provided for SBPF to file a Notice of Intent for Phase 1 of the project with the Commission by July 5, 2013.

On October 9, 2013, the Town and SBPF entered into an Amendment to the MOU (the "Amendment") superseding certain provisions in the original MOU but preserving all other terms and conditions not specifically superseded. See Exhibit 2 (Amendment to the Memorandum of Understanding Between the Town of Nantucket and Siasconset Beach Preservation Fund, Inc. for the Design, Permitting and Construction of a Coastal Erosion Structure and for the Protection and/or Relocation of Baxter Road). The Amendment was based on the fact that "certain of the facts and assumptions underlying the terms and conditions set forth in the original MOU have changed and/or no longer apply [and] the parties wish to enter into the Amendment so as to bring their agreement up to date."

The Amendment provides that such "changed facts and underlying assumptions include but are not limited to changes in the scope and timing of the erosion protection project and related actions, as well as changes which may result in a change to the funding mechanism referred to" in the MOU. The Amendment, however, most decidedly did not in any way provide that SBPF no longer intended to proceed with the larger coastal engineering project nor did it contemplate that the project now under MEPA review was designed as a stand-alone project intended as a permanent solution to the possible destruction of pre-1978 houses.

Rather, the Amendment is specifically targeted as an emergency project designed to provide temporary protection to the most threatened sections of the public way, Baxter Road, and related infrastructure, prior to the then upcoming 2013-14 Winter storm season.

Specifically, the Amendment provides that during the underlying hearing on SBPF's Notice of Intent on the project in its entirety, and based on the findings of the Town's engineering consultant, –

the Town has identified two potential failures involving Sconset Bluff in the area of Baxter Road, including 1) global failure which would be a catastrophic bank failure caused by undermining at the toe of the bluff by wave action; and 2) local failure which would result along smaller sections of the bluff and is more likely to be caused by runoff discharging from the top of the bank and running down the exposed face of the bluff, so that there is an immediate need for emergency measures to protect Baxter Road and the associated utilities temporarily, in order to maintain vehicular access and utility service to the residential properties on Baxter Road;

See Exhibit 2, p. 1, 3d par.

Purvi P. Patel, EIT  
September 23, 2014  
Page 4

The Amendment provides that SBPF and the Town shall apply as co-applicants for approval of an emergency project to protect Baxter Road temporarily in the areas where Baxter Road appeared to be in imminent danger due to erosion of Sconset Bluff, specifically from 85 to 107A Baxter Road. The Amendment also provides that the Town agree to assist in expediting the public hearing and related processes on the emergency project so that the Commission's hearing on the emergency project open on or before October 16, 2013, with the intent that emergency measures could proceed and be installed as soon as possible and prior to the 2013-14 Winter storm season.

Because the emergency project was being constructed on Town-owned land on the coastal beach located along the toe of the bluff, the Board of Selectmen entered into a License Agreement with SBPF permitting SBPF's entry to use the licensed premises to construct the coastal engineering structure "to the extent such structure is permitted by the Commission." See Exhibit 3 (License Agreement). The License Agreement is "revocable by the Town at its sole discretion" upon 60 days' written notice.

Thus, it is the emergency project, expressly and specifically intended as a temporary means for protecting the public way and related infrastructure during the 2013-14 Winter storm season, which is currently under MEPA review. However, it is the project as a whole, particularly those aspects of the larger project which are specifically intended to protect against destruction of pre-1978 houses located in the intended larger project area, which must be considered when determining whether to require the filing of an Environmental Impact Report. Accordingly, the Town and the Commission respectfully contend that an Environmental Impact Report is mandated under the segmentation regulation contained in 310 CMR 11.01(2)(c).

**B. Alternatives Analysis**

The Town and the Commission respectfully submit further than an Environmental Impact Report must be required in light of the substantial evidence on the record before the Commission of actual or probable damage to the environment arising from the project as currently proposed, and feasible alternatives which would lessen such actual or probable damage.

301 CMR 11.02 defines "Damage to the Environment," in relevant part, as:

- Any destruction or impairment (not including insignificant damage or impairment), actual or probable, to any of the natural resources of the commonwealth including, but not limited to, ... destruction of seashores, dunes, marine resources, ... wetlands, open spaces, [and] natural areas ...

During the public hearing before the Commission on the underlying Notice of Intent, extensive evidence was presented concerning actual or probable damage to the environment as a

Purvi P. Patel, EIT  
September 23, 2014  
Page 5

result of the structure as proposed, if allowed to remain permanently in place. See Exhibit 4 (submissions of Applied Coastal Research and Engineering, Inc., dated October 30, 2013 and November 8, 2013) and Exhibit 5 (submission of Jim O'Connell, Coastal Advisory Services, dated November 4, 2013). In summary, the main problem with the project as currently designed concerns the volume and timing of sediment/sand supply from the coastal engineering structure not accurately replicating the natural function of the coastal bank. The unnatural and insufficiently mitigated new function of the now hard-armored bank is likely to result in the loss of the coastal beach in front of the bank and will also adversely impact downdrift properties and resources within the littoral cell of the eastern shoreline of Nantucket. See Exhibit 5. It is also likely to result in scour and accelerated erosion on adjoining properties along the coastline immediately north and south of the project area. See Exhibit 4.

The record also contains evidence of feasible alternative projects which involve a higher and more effective degree of sand nourishment, and a softer surface in the areas of impact facing wind and wave action so that the release of sediment and sand more accurately replicates the natural function of the coastal bank. The softer project alternatives, such as a hybrid structure involving jute or coir components will more accurately replicate the natural sediment and sand supply which would otherwise come from the naturally eroding coastal bank and would more adequately mitigate actual or probable adverse effects upon the coastal beach and downdrift shoreline areas while at the same time providing the erosion protection intended by the project proponent.

While the softer project alternatives may possibly involve a higher cost and more intensive maintenance protocol, they are certainly feasible alternatives which would better replicate the natural functioning of an otherwise naturally eroding coastal bank. These alternatives should be fully vetted by the project proponent in light of the substantial and irreparable adverse environmental impacts substantiated in the record by highly qualified coastal engineering experts. In this regard, it is worth noting that the project proponent's conclusory claim of no feasible alternative projects is particularly suspect in light of the project proponent's own contradictory statement that the geotube project for which it now seeks approval was not a viable long term solution when it was seeking approval for the rock revetment armoring project. See Exhibit 6 (excerpt from SBPF's July 2, 2013 Notice of Intent). When seeking approval for the rock revetment, SBPF specifically represented that geotubes "are not well-suited to a high energy environment like Sconset" and "are not considered a viable long-term erosion control solution." At the very least, this representation renders it undeniable that this is a segmented project proposal which cannot be allowed to bypass an Environmental Impact Report.

Finally, it must also be noted that following the meeting conducted by MEPA officials at the office of MassDEP in Lakeville on September 5, 2014, the Commission offered to discuss alternate project proposals with SBPF in the context of agreed public remand proceedings. SBPF has declined this offer. This is unfortunate, as a continued public process before the local Commission provides the best forum for vetting alternate project proposals. This makes it particularly

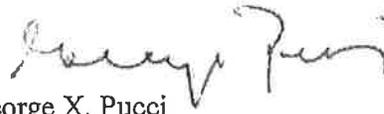
**KOPELMAN AND PAIGE, P.C.**

Purvi P. Patel, EIT  
September 23, 2014  
Page 6

appropriate for the Secretary to require a full alternatives analysis in an Environmental Impact Report for the project in question, not only for the segment of the project originally intended to temporarily protect the existing public way, but also for the intended project in its entirety, as referenced above.

Thank you for your consideration of the foregoing comments.

Very truly yours,



George X. Pucci

GXP/man

cc: Town Manager (by electronic mail)  
Natural Resources Coordinator (by electronic mail)  
David S. Weiss, Esq.  
Steven L. Cohen, Esq.

506674/19705/0038

# EXHIBIT

1

**Memorandum of Understanding  
Between  
The Town of Nantucket  
and  
Siasconset Beach Preservation Fund, Inc.  
for the Design, Permitting and Construction  
of a Coastal Erosion Structure  
and for the Protection and/or Relocation of Baxter Road**

This Memorandum of Understanding ("MOU") is entered into this 5<sup>th</sup> day of July, 2013, by and between the Board of Selectmen of the Town of Nantucket (the "Town") and Siasconset Beach Preservation Fund, Inc. ("SBPF"), a Massachusetts 501(c)(3) corporation created by residents of Nantucket to protect historic homes and associated public infrastructure along Baxter Road in the Siasconset area of Nantucket; hereunto duly authorized.

WHEREAS, the Town and SBPF have determined that certain private homes located on or near Siasconset Bluff and Baxter Road, a public way, may be imminently threatened with damage and/or loss and destruction due to severe erosion of the bluff which has intensified since the Winter of 2012-2013;

WHEREAS, the Board of Selectmen has determined pursuant to Chapter 67 of the Town Code, Management of Coastal Properties Owned by the Town, that an emergency exists that threatens public roads and other assets from imminent destruction;

WHEREAS, both Parties have agreed to cooperate with one another to take prudent steps in an attempt to stabilize the coastal bluff thereby protecting the remaining privately-owned properties and structures and to ensure that Baxter Road remains open and accessible to provide safe access to the residents of Baxter Road and Sankaty Light, which may by necessity include the relocation and reconstruction of all or a portion of Baxter Road and public utilities that serve the residents in the area (the Project);

WHEREAS, the Board of Selectmen is committed to supporting measures that will have the likely effect of preventing damage to, or destruction of, Baxter Road as long as the Project as proposed by SBPF can be accomplished without resulting in further or additional coastal erosion, or other environmental damage, as may be determined by the Town's consultant, the Conservation Commission, and/or the Department of Environmental Protection;

WHEREAS, the Town and SBPF wish to set forth in this MOU the respective expectations of the Parties;

NOW THEREFORE, the Parties agree that the following framework and process will govern the cooperative effort to accomplish the goals set forth in this MOU.

1. The Project will be divided into three parts: (1) SBPF has proposed in Phase 1 the construction of a coastal erosion structure consisting of a rock revetment and reinstallation of the bluff walk for a distance of approximately 1500 linear feet located between approximately 75 and 119 Baxter Road, as shown more specifically on the map attached hereto depicting the proposed project area and proposed phases of construction, (2) Phase 2 proposes the construction of an additional revetment to protect the remaining exposed bank on the north end in and around Phase 1 and moving south approximately 2,500 feet to the start of the eroding bank, and (3) Phase 3 includes the planning, design, permitting, and construction or relocation of Baxter Road and public utilities if it becomes necessary due to further coastal erosion. A portion of the Project may be constructed on Town-owned land. In such event, the Town will provide SBPF with a license or other legal instrument to permit access to the Town land.

2. The Town will undertake steps forthwith to hire an independent consultant to conduct a peer review of SBPF's plan to stabilize the coastal bank by installing the revetment. The Town's consultant will also provide an assessment to the Town regarding the likelihood that the Project will achieve the intended result of stabilizing the coastal bank, and, in particular, that it will likely preserve Baxter Road. The agreed scope of the Town's consultant review is more fully set forth in the memorandum prepared by the DPW Director dated June 24, 2013, titled "Baxter Road engineering scope," which is incorporated herein by reference. As an additional scope of work, and subject to a further agreement on funding, the Town's Consultant will also provide a conceptual plan for providing alternative access to the residences served by Baxter Road in the event it becomes necessary, and will assist in the preparation of a survey to determine the ownership of the land on which the Project will be located. The Town shall afford SBPF a reasonable opportunity to review and comment on the scope of work for the Town's consultant study.

3. SBPF will file a Notice of Intent ("NOI") for Phase 1 with the Conservation Commission by July 5, 2013. The submission will be prepared by SBPF at its sole cost and expense, and SBPF will take the lead in the permitting effort. To the extent Town land is required for the Project, the Board of Selectmen hereby consents to the use of Town land in connection with the Project and agrees to sign off on the NOI as a landowner. This consent by the Town is subject to a report and recommendation from the Town's Consultant, and the Board of Selectmen reserves the right to withdraw its consent and support at any time.

4. SBPF agrees forthwith to provide a gift to the Town in an amount reasonably necessary to pay for the first phase of the Town's consultant study. SBPF also agrees immediately to provide funds to the Town in an amount sufficient for the reasonable and necessary legal fees and other costs incurred by the Town to implement this MOU through the completion of Phase 1. SBPF also agrees to further reimburse the Town for reasonable and necessary consultant and legal fees through the completion of Phases 2 and 3 in amounts agreed to by the Parties prior to commencing any work. If, at any time, the Town determines that additional reasonable and necessary consulting and legal fees or other expenses will likely be incurred, the Town will promptly notify SBPF

and SBPF shall make a further contribution of funds to the Town for its agreed upon share.

5. Assuming the necessary order of conditions is issued, SBPF will construct Phase 1 at its sole cost and expense commencing as soon as the required permits are issued and become final. It is hoped that this will be accomplished by early Fall 2013. SBPF acknowledges, however, that the Board of Selectmen has no control over the hearing process or the ultimate decision that the Conservation Commission may make, although the Board agrees that it will cooperate with SBPF in supporting the application process.

6. Prior to the construction of Phases 2 or 3, SBPF and the affected homeowners, including those located within proximity of the Project, will provide release and indemnification agreements to the Town, consents to easements and waivers of damages in the case of any taking by the Town which is necessary for the relocation and/or reconstruction of Baxter Road, or any other portion of the Project, and consents to betterment assessments, where appropriate, and SBPF shall also obtain to the fullest extent possible releases from homeowners potentially affected by the Project. SBPF agrees to commence immediately and to diligently pursue obtaining the consents and waivers as set forth in the paragraph. The Town shall have no obligation to proceed with Phases 2 or 3 unless it is satisfied that appropriate waivers and releases have been secured. SBPF will establish and fund an escrow account in an amount reasonably acceptable to both Parties to be used for the maintenance and repair of any coastal erosion structures that are constructed under Phase 1. SBPF shall also provide further funding as reasonably agreed by the parties in advance of Phase 2 and 3. The escrow agreement will provide a trigger mechanism for maintenance of the fund at an agreed upon level and will be replenished by the SBPF if the balance in the fund falls below the agreed-upon minimum level.

7. Because construction of Phase 1 will be performed solely by SBPF, the Parties believe there will be no requirement that the Massachusetts Public Bidding Laws be followed and the project will not be subject to the Prevailing Wage Law. The Town, however, makes no specific assurance in this regard, and the Parties acknowledge that SBPF and the Town will be required to follow all federal, state, and local laws and regulations applicable to the Project.

8. The Parties agree to diligently pursue the permitting, design, and construction of Phases 2 and 3 of the Project (if necessary) including an agreement on cost sharing and possible betterment assessments. If the cost of construction in either Phase 2 or 3 involves the proposed expenditure of Town funds, the Board of Selectmen shall vote whether to support such expenditure and the project will require and be conditioned on a Town Meeting appropriation at a Special or Annual Town Meeting. Construction work will be subject to the Massachusetts Public Construction Laws including the Prevailing Wage Law.

9. The Parties recognize that the order of the work in the three phases may have to be adjusted depending on the pace of continued erosion.

10. The Parties acknowledge that the ability to proceed with the Project is subject to the availability of funds including, in the case of the Town, an appropriation from Town Meeting, and it is dependent on the receipt of all required permits and approvals in a form reasonably satisfactory to both Parties.

11. If, at any time, either Party determines that it is not practical or prudent to proceed with the Project, this MOU may be terminated and shall have no further force or effect, except that to the extent SBPF has agreed to provide funding to the Town for any consulting, legal, or other services, SBPF shall be obligated to complete any funding obligations. Furthermore, any indemnification, betterment assessment, waiver of damages, or release agreements that have been executed, shall survive termination of this MOU.

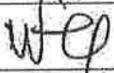
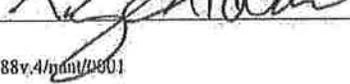
Entered into the date and year written above.

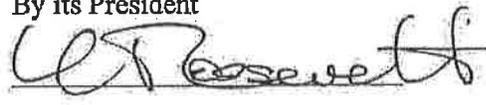
Town of Nantucket

Siasconset Beach Preservation Fund, Inc.

By its Board of Selectmen

By its President

\_\_\_\_\_  
  
\_\_\_\_\_  
  
\_\_\_\_\_  
  
\_\_\_\_\_  
  
\_\_\_\_\_  


\_\_\_\_\_  


476088v.4/pdm/0901



Baxter Road and Sconset Bluff Storm Damage Prevention Project Nantucket, MA

Figure 2  
Aerial Locus

# EXHIBIT

2

**Amendment to the  
Memorandum of Understanding  
Between  
The Town of Nantucket  
and  
Siasconset Beach Preservation Fund, Inc.  
for the Design, Permitting and Construction  
of a Coastal Erosion Structure  
and for the Protection and/or Relocation of Baxter Road**

This shall serve as an amendment ("Amendment") to the Memorandum of Understanding ("MOU") entered into on July 5, 2013, by and between the Board of Selectmen of the Town of Nantucket (the "Town") and Siasconset Beach Preservation Fund, Inc. ("SBPF"), a Massachusetts 501(c)(3) corporation created by residents of Nantucket to protect historic homes and associated public infrastructure along Baxter Road in the Siasconset area of Nantucket; hereunto duly authorized. Any and all terms and conditions of this Amendment which are inconsistent with the terms and conditions contained in the MOU are expressly intended to supersede such terms and conditions so that they shall no longer apply. All other terms and conditions shall remain in full force and effect.

WHEREAS, certain of the facts and assumptions underlying the terms and conditions set forth in the original MOU have changed and/or no longer apply, the parties recognize and wish to enter into this Amendment so as to bring their agreement up to date. Such changed facts and underlying assumptions include but are not limited to changes in the scope and timing of the erosion protection project and related actions, as well as changes which may result in a change to the funding mechanism referred to in numbered paragraph 7 of the MOU;

WHEREAS, during the public hearings on SBPF's underlying NOI and the findings of the Town's engineering consultant, the Town has identified two potential failures involving Siasconset Bluff in the area of Baxter Road, including 1) global failure which would be a catastrophic bank failure caused by undermining at the toe of the bluff by wave action; and 2) local failure which would result along smaller sections of the bluff and is more likely to be caused by runoff discharging from the top of the bank and running down the exposed face of the bluff, so that there is an immediate need for emergency measures to protect Baxter Road and the associated utilities temporarily, in order to maintain vehicular access and utility service to the residential properties on Baxter Road;

WHEREAS, the Town's engineering consultant has also determined that there is an immediate need for an emergency response action plan outlining how the Town will provide emergency vehicular access, water supply and sanitary sewer service to the residences at the north end of Baxter Road in the event of a failure of the roadway and that there is also a need for long-term planning for the potential eventual loss of Baxter

Road regardless of whether temporary and/or permanent protection measures for Siasconset Bluff are ultimately approved by the Town's Conservation Commission and the Massachusetts Department of Environmental Protection;

NOW THEREFORE, the Parties agree to the following amended course of action to that agreed to in the original MOU:

1. SBPF and the Town shall apply, as co-applicants, for approval of an emergency project to protect Baxter Road temporarily in the areas where Baxter Road appears to be in imminent danger due to erosion of Siasconset Bluff, specifically from 85 to 107A Baxter Road. SBPF shall pay for all engineering and construction costs related to such project, maintenance and repair of any approved installation, and mitigation and/or removal of any approved temporary protection installation in the event of failure of, or damage caused by such installation and shall also indemnify the Town against liability arising from damage caused by such installation.

2. SBPF shall provide funding for professional services for the Town including legal, engineering, and survey services, to formulate an emergency action plan outlining how the Town will provide emergency vehicular access, water supply, and sanitary sewer service, to the residences at the north end of Baxter Road, and shall ensure that utilities are notified and requested to provide an emergency response action plan for the relocation of electric, telephone and cable utility service to the area.

3. SBPF shall assist the Town with respect to long-term planning for the possible eventual loss of Baxter Road, regardless of whether a permanent coastal engineering structure is ultimately approved by the Conservation Commission, and SBPF agrees to assist the Town in preparing for "springing easements" triggered by the Town and/or County if there is a failure of Baxter Road, the criteria for which shall be established as soon as possible with the intent that the Town and/or County can act promptly in the event of such failure, to construct alternative access. SBPF shall provide the necessary funding for engineering and design services for construction of one or more alternative roadways, as well as funding necessary for surveys, preparation of easement taking plans, and appraisals for the relocation of Baxter Road. SBPF shall also endeavor to obtain easements or access agreements from private property owners so that takings can be avoided or minimized to the fullest possible extent.

4. The Town agrees to assist in expediting the public hearing and related processes on the emergency project so that the Conservation Commission's hearing on the emergency project opens on or before October 16, 2013, with the intent that emergency measures can proceed and be installed as soon as possible, and prior to the Winter, 2013/14 storm season. To the extent Town land is required for this emergency project, including access thereto, the Town by its Board of Selectmen hereby consents to such use, subject to permitting and applicable law.

Entered into this 9<sup>th</sup> day of October, 2013.

Town of Nantucket

Siasconset Beach Preservation Fund, Inc.

By its Board of Selectmen

By its President

Wey  
[Signature]  
Tegarden  
[Signature]  
[Signature]  
[Signature]

[Signature]

483036/19726/0001

# EXHIBIT

3

## LICENSE AGREEMENT

THIS AGREEMENT is entered into this 13 day of December, 2013, by and between the Town of Nantucket, a body politic and corporate and a political subdivision of the Commonwealth of Massachusetts, acting by and through its Board of Selectmen, having an address of Town & County Building, 16 Broad Street, Nantucket, Massachusetts 02554 (the "Town"), being the owner of Assessor's Parcel 48-8 in said Nantucket (the "Town Property") and Siasconset Beach Preservation Fund, Inc. ("SBPF"), a Massachusetts 501(c)(3) corporation created by residents of Nantucket to protect homes and associated public infrastructure along Baxter Road in the Siasconset area of Nantucket, and the owners of private properties (the "Private Property Owners") located along Baxter Road ("the "Private Property"), as listed on the signatory page of this document. SBPF represents and expressly warrants that it is a corporate entity with the legal authority to contract under state and federal law, and that the undersigned has express authority to sign this license as a binding contract on its behalf. SBPF shall also provide the Town with such corporate documents as are necessary to confirm these representations and warranty.

WHEREAS, the Town and the Private Property Owners are the owners of record of portions of the Town Property and the Private Property shown on a plan attached hereto as Exhibit A (the "Licensed Premises");

WHEREAS, the Town and SBPF have entered into a Memorandum of Understanding and Amendment to the Memorandum of Understanding agreeing that the Town and SBPF shall apply, as co-applicants, for approval of an emergency project (the "Project") to protect Baxter Road temporarily in the areas where Baxter Road appears to be in imminent danger due to erosion of Siasconset Bluff, specifically from 85 to 107A Baxter Road; and

WHEREAS, the Town and SBPF, with the assent of the Private Property Owners have filed applications with the Nantucket Conservation Commission (the "Commission") for approval of the Project, which, if approved, would involve the entry upon and use of the Licensed Premises for construction of a coastal engineering structure upon the Licensed Premises, including the associated supplemental erosion protection, and associated inspections, repairs and mitigation activities, as described in the application materials to the Commission.

NOW, THEREFORE, in consideration of the mutual promises and covenants herein made, the parties hereto agree as follows:

1. The Town and the Private Property Owners hereby grant to SBPF a non-exclusive license to enter and use the Licensed Premises to construct a coastal engineering structure to the extent such structure is permitted by the Commission, including the associated supplemental erosion protection, and associated inspection, repairs and mitigation activities and expressly subject to

any and all conditions which the Commission shall impose upon such permit, and subject also to any and all other federal, state, or local laws, bylaws, regulations or code provisions which may apply to the project, including applicable provisions of the Massachusetts Public Construction laws, including without limitation G.L. c. 30, § 39M relating to construction of public works projects, and any applicable provisions of G.L. c. 149 relating to the payment of prevailing wages, as may be determined by the Town in its sole discretion prior to SBPF entering into any contract for construction work on Town Property. Such entry and use shall be exercised from the date of the execution of this License, with no work altering the Licensed Premises to commence until the date upon which any permit from the Commission shall become effective, and shall continue until such date as it is terminated or the entry and use is no longer permitted in accordance with the conditions imposed upon the project by the Commission. The Private Property Owners also agree to grant the Town the necessary easements for a One Big Beach Easement as shown on a plan and in a form to be mutually agreed upon. The Town and the Private Property Owners make no representation or warranty, by said grant of license hereby or otherwise, that they have title to or rights in the Licensed Premises or that the Licensed Premises may be used for any purpose other than that expressly permitted and conditioned by the Commission. SBPF acknowledges that it has not relied upon any warranties or representations of the Town or the Private Property Owners nor any person acting on their behalf, and that SBPF agrees to accept the Licensed Premises "as is", with no liability on the part of the Town or the Private Property Owners for any condition or defect of title in the Licensed Premises, whether or not known to the Town or the Private Property Owners or any representatives. The terms of this paragraph shall survive the termination of this License.

2. SBPF shall own any coastal engineering structure and associated erosion control measures which may be permitted by the Commission and installed on the Licensed Premises. SBPF shall be solely responsible for the design and construction of the structure and the means, methods and techniques used for building the structure in accordance with the conditions imposed by the Commission and shall also bear all costs of design and construction. SBPF shall also be solely responsible for all costs necessary for maintenance and repair of the structure in accordance with any and all conditions of approval from the Commission, including the costs of any required mitigation, such as sand replenishment. SBPF shall also be solely responsible for the costs of removal of the structure upon either expiration of any deadline set forth in the Commission's Order of Conditions or prior thereto if removal is validly ordered by the Commission, or by the Board of Selectmen in connection with any revocation of this License and shall also be solely responsible for the cost of restoration of the Licensed Premises to the condition of the Licensed Premises at the time of the commencement of this License or if that is not possible, to conditions that restore the form and function of the disturbed bank

and beach to the fullest extent reasonably possible as approved by the Commission. SBPF shall provide the Town with a letter of credit or surety funds in an amount to be confirmed by the Director of Public Works and form satisfactory to the Town in order to secure the faithful performance of any of the foregoing obligations should SBPF fail to fulfill its obligations under this License Agreement, or the reasonable costs of removal and restoration, which shall remain in effect until the completion of all obligations under this License to the Town's reasonable satisfaction.

3. SBPF agrees to indemnify, defend with counsel of the defendant's choosing, and hold the Town and the Private Property Owners harmless from and against all claims, demands, losses, costs, damages, causes of action, or liabilities whatsoever, including but not limited to mechanic's liens and reasonable attorney's fees and expenses, which may be imposed upon, incurred by, or asserted against the Town or the Private Property Owners, or their respective agents, employees, successors and assigns of either by third parties by reason of (a) the construction, maintenance, mitigation, or removal of, any coastal engineering structure permitted by the Commission and any failure on the part of SBPF, its agents, contractors, or representatives to comply with any condition required to be performed or complied with by SBPF by the Commission; (b) for death, bodily injury or property damage suffered by any person on account of or based upon the act, omission, fault, negligence or misconduct of any person whomsoever, other than the defendant, relating in any way, to SBPF's exercise of its rights under this License; (c) any claims seeking damages for alleged adverse effects arising from the construction of the coastal engineering structure including but not limited to alleged adverse effects to downdrift properties, claims for takings, property damage, loss of use, negligence, nuisance, trespass, or diminution of property value; (d) the discharge, release or threatened release at or from the Licensed Premises of oil or hazardous material as defined under federal, state or local law which is caused by SBPF, its agents, contractors, or representatives under this License. The terms of this paragraph shall survive the termination of this License.
4. SBPF will be solely responsible for any hazards created through SBPF's acts or omissions in connection with this License. Furthermore, SBPF and the Private Property Owners hereby release the Town and the County of Nantucket (the "County"), from any and all claims and liabilities of every kind, nature and description whatsoever, whether known or unknown, in both law and equity, which they have or may have had from the beginning of the world to the date of execution of this License, and more particularly with respect to any alleged acts or omissions of the aforesaid released parties concerning Baxter Road, erosion of Siasconset Bluff, and any related subject matter. SBPF and the Private Property Owners also release the Town and the County from any responsibility or liability for SBPF's or the Private Property Owner's losses or damages related to the condition of the Licensed Premises,

and agree and covenant that they will not assert or bring, nor cause any third-party to assert or bring any claim, demand, lawsuit or cause of action against the Town related to the Licensed Premises including without limitation, claims for takings, property damage, loss of use, negligence, nuisance, wrongful death, trespass, diminution in property value, personal injury damages and any other damages relating to or arising from the SBPF's use of the Licensed Premises. The provisions of this Paragraph shall survive the termination of this License.

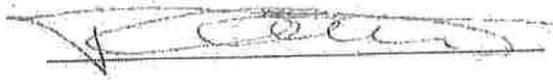
5. SBPF also agrees to provide all funding for engineering and design services for the layout of a new public road, as well as funding for surveys, preparation of easement taking plans and appraisals.
6. This License shall not be construed as creating or vesting in the Licensees any estate in the Licensed Premises, but only the limited right of entry and use as hereinabove stated.
7. This License is personal and exclusive to SBPF and is not intended to run with the land. This License may not be transferred or assigned without the express written consent of the Town.
8. This License represents the complete understanding and entire agreement between the parties hereto with respect to the entry and use of the Licensed Premises. The terms of the aforesaid Memorandum of Understanding and Amendment to the Memorandum of Understanding shall remain in full force and effect to the extent they are consistent with this License. To the extent such terms are inconsistent, the terms of the License shall govern and any inconsistent terms shall be superseded and of no effect.
9. This License is to be interpreted under and construed in accordance with the laws of the Commonwealth of Massachusetts. If any portion of this License is deemed to be illegal, unenforceable or void by a court of competent jurisdiction, then all parties shall be relieved of their obligations under that provision, but the remainder shall be enforceable to the fullest extent permitted by law.
10. SBPF shall procure all necessary permits before undertaking any work on the Licensed Premises. The siting of the coastal engineering structure and associated activities shall be performed in accordance with the conditions set by the Commission. SBPF shall not permit any mechanics' liens or similar liens, to remain upon the Licensed Premises for labor and material furnished to SBPF or claimed to have been furnished to SBPF in connection with any work performed or claimed to have been performed at the direction of SBPF and SBPF shall cause any such lien to be released forthwith at no cost to the Town. During the exercise of the rights hereby granted, SBPF shall at all times conduct itself so as to not unreasonably interfere with the use or

operations of the Town on the Town Property, and the use of the Private Property by the Private Property Owners. The SBPF shall at all times comply with all applicable local, state, and federal rules, regulations, statutes and by-laws, and the permits and conditions issued for the project on the Licensed Premises.

11. This License shall be revocable by the Town at its sole discretion upon written notice of revocation at least sixty (60) days prior to the termination date stated within said notice. In the event that this License is terminated, then SBPF at its own expense shall remove the structure from the Licensed Premises and restore the Licensed Premises to the condition at the time of the commencement of this License and if this is not possible, to conditions that restore the form and function of the disturbed bank and beach to the fullest extent reasonably possible as agreed to by the Commission. This obligation shall survive the termination of this License.
12. SBPF shall maintain during the term of this License public liability insurance, including coverage for bodily injury, wrongful death and property damage, and coverage for any of the claims referenced in paragraphs 3 and 4 above, in the following minimum amounts: General Liability \$10,000,000 per occurrence; Bodily Injury Liability \$10,000,000 per occurrence; and Property Damage Liability or a combined single limit of \$10,000,000 annual aggregate limit. Prior to entering upon the Licensed Premises, and thereafter on or before January 1 of each year of the term of this License, SBPF shall provide the Town with a certificate of insurance in each case indicating the Town as an additional insured on the policy and showing compliance with the foregoing provisions. SBPF shall require the insurer to give at least thirty (30) days written notice of termination, reduction or cancellation of the policy to the Town. SBPF or its contractors shall maintain workmen's compensation insurance during any site work, maintenance or repair on the Licensed Premises, as required by law. SBPF agrees that while any contractor is performing work on behalf of SBPF at the Licensed Premises the contractor shall carry liability insurance and automobile liability insurance in amounts of General Liability and Automobile Liability insurance in amounts of \$3,000,000.00, combined single limit and shall name the Town as an additional insured party. Prior to any construction or site work on the Licensed Premises performed by SBPF or any contractor on behalf of SBPF on the Licensed Premises, SBPF shall provide the Town with a copy of the contractor's insurance certificate indicating liability insurance coverage as herein specified, and copies of any approval, permits, necessary or obtained to construct or siting of the dwelling and any construction or excavation work.
13. The Town reserves the rights and SBPF shall permit the Town to enter upon and use that portion of the Licensed Premises situated on the Town Property at any time and for all purposes at the Town's sole discretion provided it does

EXECUTED as an instrument under seal as of the date first above written.

TOWN OF NANTUCKET  
By its Board of Selectmen

  
\_\_\_\_\_  
  
\_\_\_\_\_  
  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Siasconset Beach Preservation Fund, Inc.

By: \_\_\_\_\_

85 Baxter Road

By: \_\_\_\_\_

87 Baxter Road

By: \_\_\_\_\_

91 Baxter Road

By: \_\_\_\_\_

93 Baxter Road

By: \_\_\_\_\_

97 Baxter Road

By: \_\_\_\_\_

99 Baxter Road

By: \_\_\_\_\_

101 Baxter Road

By: \_\_\_\_\_

105 Baxter Road

By: \_\_\_\_\_

107 Baxter Road

By: \_\_\_\_\_

107A Baxter Road

By: \_\_\_\_\_

not unreasonably interfere with the operations of the SBPF on the Licensed Premises.

14. All notices given pursuant to this License shall be in writing and sent to the other party at the address set forth in the first paragraph hereof, by United States Mail or overnight express courier. Either party may, from time to time, specify one additional party to receive written notice in order for such notice to be binding.

**[REMAINDER OF PAGE LEFT INTENTIONALLY BLANK]**

EXECUTED as an instrument under seal as of the date first above written.

TOWN OF NANTUCKET  
By its Board of Selectmen

Siasconset Beach Preservation Fund, Inc.

\_\_\_\_\_  
  
\_\_\_\_\_  
  
\_\_\_\_\_  
  
\_\_\_\_\_  
  
\_\_\_\_\_

By: \_\_\_\_\_

85 Baxter Road

By: \_\_\_\_\_

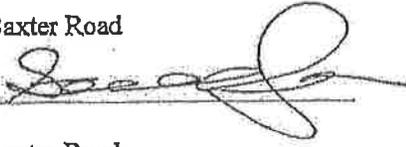
87 Baxter Road

By: \_\_\_\_\_

91 Baxter Road

By: \_\_\_\_\_

93 Baxter Road

By:  \_\_\_\_\_

97 Baxter Road

By: \_\_\_\_\_

99 Baxter Road

By: \_\_\_\_\_

101 Baxter Road

By: \_\_\_\_\_

105 Baxter Road

By: \_\_\_\_\_

107 Baxter Road

By: \_\_\_\_\_

107A Baxter Road

By: \_\_\_\_\_

EXECUTED as an instrument under seal as of the date first above written.

TOWN OF NANTUCKET  
By its Board of Selectmen

\_\_\_\_\_  
  
\_\_\_\_\_  
  
\_\_\_\_\_  
  
\_\_\_\_\_  
  
\_\_\_\_\_

Siasconset Beach Preservation Fund, Inc.

By: \_\_\_\_\_

85 Baxter Road

By: \_\_\_\_\_

87 Baxter Road

By: \_\_\_\_\_

91 Baxter Road

By: \_\_\_\_\_

93 Baxter Road

By: \_\_\_\_\_

97 Baxter Road *Margaret McQuade*

By: *Laura C McQuade*

99 Baxter Road

By: \_\_\_\_\_

101 Baxter Road

By: \_\_\_\_\_

105 Baxter Road

By: \_\_\_\_\_

107 Baxter Road

By: \_\_\_\_\_

107A Baxter Road

By: \_\_\_\_\_

EXECUTED as an instrument under seal as of the date first above written.

TOWN OF NANTUCKET  
By its Board of Selectmen

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Siasconset Beach Preservation Fund, Inc.

By: *[Signature]*

85 Baxter Road

By: *[Signature]*

87 Baxter Road

By: \_\_\_\_\_

91 Baxter Road

By: \_\_\_\_\_

93 Baxter Road

By: \_\_\_\_\_

97 Baxter Road

By: \_\_\_\_\_

By: *[Signature]*

99 Baxter Road

101 Baxter Road

By: \_\_\_\_\_

105 Baxter Road

By: \_\_\_\_\_

107 Baxter Road

By: \_\_\_\_\_

107A Baxter Road

By: \_\_\_\_\_

EXECUTED as an instrument under seal as of the date first above written.

TOWN OF NANTUCKET  
By its Board of Selectmen

Siasconset Beach Preservation Fund, Inc.

\_\_\_\_\_

By: \_\_\_\_\_

85 Baxter Road

\_\_\_\_\_

By: \_\_\_\_\_

87 Baxter Road

\_\_\_\_\_

By: \_\_\_\_\_

91 Baxter Road

\_\_\_\_\_

By: \_\_\_\_\_

93 Baxter Road

\_\_\_\_\_

By: \_\_\_\_\_

97 Baxter Road

By: \_\_\_\_\_

99 Baxter Road

By: \_\_\_\_\_

101 Baxter Road

By: \_\_\_\_\_

105 Baxter Road *to Kim B. Matheson*

By: *Marilee B. Matheson*

107 Baxter Road

By: \_\_\_\_\_

107A Baxter Road

By: \_\_\_\_\_

101 Baxter Road LLC

By: J. Walker III, on behalf of  
Member of "101 Baxter Rd LLC"  
James E. Walker, III, Manager

105 Baxter Road

By:

107 Baxter Road

By:

107A Baxter Road

By:

# EXHIBIT

4



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

**MEMORANDUM**

**Date:** October 30, 2013  
**To:** Emily MacKinnon and Cormac Collier, Nantucket Land Council  
**From:** John Ramsey, P.E. and Trey Ruthven  
**Subject:** Baxter Road Temporary Stabilization Application

We have reviewed the Baxter Road Temporary Stabilization Application in conjunction with the additional information submitted by Milone & MacBroom, Inc. (MMI) in support of the application. Similar to the previous projects that have been proposed along Sconset Bluff, Applied Coastal is concerned with the inadequacies of proposed mitigation efforts. Another concern is the scale of the proposed project which has been characterized as temporary, but has several design features which are characteristics of permanent coastal engineering structures.

**Mitigation**

The proposed geotubes structure is designed to act in a similar manner to a revetment by isolating the coastal bank and beach from erosive forces. By cutting off the supply of material from the coastal bank to the littoral system the project will shift and magnify erosion onto adjacent Town owned beach and neighboring properties along the coastal bank which already face significant erosional concerns. Therefore the geotube structure should be accompanied by an appropriate mitigation plan to offset adverse impacts associated with the coastal engineering structure. MMI presents the following table to illustrate the volume of sand nourishment provided:

| Placement Location  | Rate of Placement (CY/LF) | Length of Placement (Feet) | Total Volume (CY) |
|---------------------|---------------------------|----------------------------|-------------------|
| Inside Geotubes     | 4.22 (each tube)          | 1,500                      | 25,320            |
| Leveling Sand       | 2.3                       | 1,500                      | 3,450             |
| Nourishment Sand    | 14.3                      | 1,500                      | 21,450            |
| <b>TOTAL VOLUME</b> |                           |                            | <b>50,220</b>     |

\*Reproduced from: MMI's October 25, 2013 letter to the Conservation Commission

The first and largest volume listed within the table is the 25,320 CY of sediment contained within the geotubes. The sediment within the geotubes should not be considered mitigation nourishment, since the sediment is isolated from the littoral system within the geotubes and provides no mitigation value to the shorelines updrift and downdrift of the proposed structure. The leveling sand should also not be considered mitigation nourishment; the sediment is isolated from the littoral system behind the geotubes and the geo-textile scour apron. The remaining nourishment volume, 21,450 CY, equates to 14.3 CY/LF which is significantly below the volumes naturally contributed to the beach from the bluff as calculated by:

- Massachusetts Coastal Zone Management – 15 to 26 CY/lf/year (Letter to the Conservation Commission dated August 26, 2013)
- Coastal Planning & Engineering, Inc. (Siasconset Beach Preservation Fund (SBPF) engineering consultant) – 24.2 CY/lf/year from the sediment budget developed for the period 1995 to 2005 submittal on behalf of SBPF to Nantucket Conservation Commission in November 2006
- SBPF's 2012 Notice of Intent for gabion project (produced by SBPF consultant Epsilon Associates, Inc.) – 19.1 to 19.5 CY/lf/year (these values excluded 13% of the total volume eroding from the bank due to fines, with the inclusion of fines the erosion rate is 20.8 to 22.2 CY/lf/year).
- Ocean and Coastal Consults, Inc. (SBPF engineering consultant) – 20.7 CY/lf/year from the September 2010 Siasconset Coastal Bank Stabilization and Beach Preservation Project Alternatives Analysis submittal on behalf of SBPF to Nantucket Conservation Commission.

Based on annual bank and beach sediment contribution rates previously provided by SBPF, it appears that the mitigation nourishment volume should be closer to 22 CY/lf/year (33,000 CY per year) which is the average of the three sediment contributions presented previously by SBPF consultants. The purpose of mitigation nourishment is to maintain the sediment supply that naturally erodes from the coastal bank system that is impounded by the structure. Once the proposed geotube revetment prevents erosion of the coastal beach and bank, coastal beach and bank materials are no longer available to supply downdrift beaches which in turn increase erosion on adjacent shorelines. Therefore an appropriate mitigation volume should be required on an annual basis to mitigate for the sediment lost from the littoral system. This mitigation volume would be based on long-term historical rates (see bullets above) and would be supplied regardless of monitoring results.

The placement protocol provided for the mitigation nourishment calls for the covering of the geotubes with a minimum of two feet of cover in addition to creating a bench that extends approximately 20 feet from the bank and slopes down the beach at 2.5 : 1 (horizontal : vertical). The placement of mitigation nourishment over the top of the geotubes up to an elevation of +28 feet (16 feet above the 100-Year base flood elevation) places a significant volume of the mitigation outside of the active littoral zone, thereby reducing the effectiveness of the mitigation to moderate the downdrift impacts associated with the construction of a coastal engineering structure on neighboring coastal beaches and banks. The mitigation nourishment should be placed in a sacrificial berm at the back of the beach to keep sediment within the littoral system. If there is not sufficient room for a sacrificial berm, the mitigation could be placed north and south of the geotube revetment structure. If a layer of sediment is required to cover the geotubes due to engineering/material constraints or for aesthetic concerns, then an additional volume of sediment should be provided for separately in a similar fashion to the sediment required to fill the geotubes and level the coastal bank during construction. This aesthetic coverage should not be considered mitigation.

The applicant should provide clarification to the Conservation Commission about the intended use of the excavated beach material associated with the placement of the fourth geotube below the existing beach face. The utilization of the fourth geotube will displace approximately 7,200 CY of beach material. That beach material is currently available to updrift and downdrift beaches within the littoral system should erosion occur, if the displaced beach material is utilized for

geotube filling, leveling of bank, mitigation nourishment, etc. it would represent a loss of beach material and hence should be appropriately mitigated for with additional beach nourishment.

#### Temporary Geotube Revetment

The scale of the proposed geotube revetment structure appears to be uncharacteristic of the design goal stated below,

*Work under this application is specifically proposed as temporary and intended to provide a minimum but adequate level of protection for the short term while long term solutions are explored and implemented (MMI's October 25, 2013 letter to the Conservation Commission)*

The Alternatives Analysis excludes two geotube options that clearly meet the stated design goal more appropriately than the selected Four-Geotextile-Tube Configuration that was selected. Geotube Alternative 1 – Jute Fiber Logs have been shown to work over a number of years at 79 Baxter Road. A quick glance at any recent aerial photograph shows that the Jute Logs and terracing have minimized the loss of coastal bluff relative to adjoining lots. This is further confirmed in Figure XX from Epsilon Associates, Inc. which shows the bank at 79 Baxter Road did not erode over the April 2003 to March 2012 time period (the figure was submitted in conjunction with July, 2013 NOI for Baxter Road And Sconset Bluff Storm Damage Prevention Project). The key disadvantage listed in the exclusion of this alternative is degradation of the material over time; however, the proposed project is temporary, not permanent, thus degradation of the jute material over time should not be an exclusionary criteria for rejecting the Jute Fiber Log alternative. The Jute Fiber Log alternative appears to offer the least detrimental solution for protecting the coastal bank while maintaining littoral transport and minimizing the adverse impacts to adjacent properties.

The second excluded option, Geotube Alternative 2- Three-Geotextile-Tube Configuration was the preferred alternative in October 4, 2013 submission to Conservation Commission by MMI. The three geotube alternative eliminates the significant excavation of the coastal beach that is required with the four geotube alternative. To place the fourth geotube below the beach face, the contractor will have to excavate into beach approximately 10 feet in depth and greater than 30 feet in width. Once the geotube is in placed beneath the beach, it will displace approximately 7,200 CY of beach sediment. If the proposed project were not temporary in nature, such design details may be warranted; however, for a temporary project that seeks to provide the minimum level of protection the inclusion of the fourth geotube is does not appear warranted.

The overall height of the geotube options that are being evaluated is also excessive. The still water elevation for the FEMA predicted 100-Year Event is 10.2 feet, the top crest of the geotubes extends to elevation 26.0 with an additional two feet of sand cover over that. This project is a temporary solution, not a permanent coastal engineering structure. The overall structure height should be reduced to reflect the temporary nature of the project and reduce the overall impacts to the coastal bluff. If additional protection is required over the short design life of the project, it is recommend that additional sand nourishment be provided to dissipate wave and storm energy.

#### Monitoring and Maintenance Requirements

The Conservation Commission should require additional transects be added to the current Shoreline Monitoring conducted by SBPF. A revised monitoring plan should be submitted which includes additional transects on regular intervals (50-100 foot intervals) immediately updrift and downdrift of the proposed project to monitor the project for end effects and increased erosion along the adjacent shoreline and coastal bank. The monitoring survey should be conducted pre- and post-

nourishments to allow for quantification of shoreline variations and movements after the revetment is constructed. This near-field monitoring is critical to ensure that the structures are not having adverse impacts on adjacent properties due to 'end effects'.

The mitigation plan should be conservative; the purpose of mitigation nourishment is to maintain the sediment supply that naturally erodes from the coastal bank. Once the geotube revetment prevents erosion of the coastal bank, coastal bank materials are no longer available to supply downdrift beaches. Therefore, the minimum annual mitigation should be based on the historic erosion rate rather than monitoring results. Monitoring should only be utilized to indicate where placement of mitigation material is critical. The placement of beach nourishment mitigation should not be limited to the area of the project. Due to the large volume of annual mitigation that would be required for this project, it is likely that the beach fronting the revetment will not be able to hold the volume of annual nourishment required; therefore, the Town should consider placement of nourishment both north and south of the proposed geotube limits.

Due to the large volumes of sediment associated with the construction of the geotubes, it is critical that the sediment associated with the mitigation nourishment not potentially be misplaced or redirected during the construction of the project. The mitigation nourishment needs to be placed on the beach to maintain the sediment supply that naturally erodes from the coastal bank. It is recommended that Conservation Commission require truck delivery slips stating the weight of sediment delivered be compiled into an engineering report illustrating the sediment requirements for each phase of the project and then stamped and certified by the design engineer to attest that the prescribed mitigation volumes have been placed.

#### Failure Criteria and Removal

The failure and removal criteria lack the necessary clarity and detail to evaluate the possible failure of the geotube structure in the future. For instance, *complete loss of one or more tubes*, what does *complete loss* mean? Would differential settlement along the structure length which results in the displacement/twisting of a geotube and results in a rupture of the geotextile fabric to an extent that it must be replaced or be partially emptied of sediment to be repaired represent a complete loss? If a geotube is flanked, what is the length of time that should be allowed to mitigate for the flanking, is a period of 7 days sufficient? In general the failure criteria presented is not quantitative. In addition the monitoring requirements associated with the application do not provide for quantitative assessment of the failure criteria. Therefore, there should be specific monitoring requirements associated with the failure criteria.

#### Conclusions

Reviewing the narrative presented within the NOI for the 2013 Baxter Road Temporary Stabilization Application illustrates that regardless of the stated temporary and minimal nature of the proposed project, the proposed geotube structure will cut off the supply of material from the coastal bank to the littoral system. Failure to adequately mitigate for the project will shift and magnify erosion onto adjacent Town owned beach and neighboring properties along the coastal bank. Analysis provided by SBPF, indicates that the minimum annual mitigation nourishment should be on the order of 22 CY/lf/year or approximately 33,000 CY per year. That mitigation volume would provide for one-to-one mitigation of the material that is currently being provided from the coastal bank to the littoral system. It is important to note that the one-to-one mitigation does not account for any additional erosion which is likely to occur due to end effects, wave reflection, and disturbance of the coastal bank and beach during construction. The goal of mitigation is not to prevent erosion in front of the proposed structure, but to prevent the acceleration of erosion on adjacent shorelines.



Baxter Road and Sconset Bluff Storm Damage Prevention Project Nantucket, MA

Figure XX  
2003-2012 Coastal Bank Retreat (Average of 3.18 Feet/Year)



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

---

**MEMORANDUM**

**Date:** November 8, 2013  
**To:** Emily MacKinnon and Cormac Collier, Nantucket Land Council  
**From:** John Ramsey, P.E. and Trey Ruthven  
**Subject:** 2<sup>nd</sup> Response Regarding the Baxter Road Temporary Stabilization Application

We have completed a brief review of the supplemental information provided by Milone & MacBroom (letter signed by Nicole Burnham, P.E. dated November 1, 2013 with attachments) regarding "Issues raised at Conservation Commission Meeting of October 30, 2013" relative to the Baxter Road Temporary Stabilization Application. The latest information provided a design that is substantially the same as presented during the latest Conservation Commission Hearing, without any further analysis of other potential stabilization techniques that could provide short-term stability to the bank with fewer adverse impacts.

Overall, there is a concern that the analysis provided by Milone & MacBroom to support the design and mitigation for the project is *highly dependent* on the previous (and/or ongoing) work of SBPF and their consultants. One primary area of scientific and engineering disagreement is related to the calculation of *minimum* annual nourishment requirements for coastal armoring project of the scale proposed previously by SBPF and now by the Town of Nantucket. In addition, the application remains unclear regarding the actual volume that will be placed on the beach for mitigation, as opposed to other material placed inside the geotubes, placed above the 100-year flood levels (i.e. above the toe of the existing bluff elevation), excavated from the beach to place the geotubes, or utilized to level the area for the coastal engineering structure placement. As discussed during numerous hearings regarding 'hard armoring' along the Sconset Bluff, it is critical that mitigation be performed in a proactive manner to ensure stability of adjacent bluffs. Reactive mitigation will not maintain bluff stability, since failure of adjacent bluff shorelines cannot be reconstructed through sand mitigation.

**Mitigation**

Similar to the past two SBPF armoring applications, the Town of Nantucket project would cause a complete loss of the sediment supply along the armored section; however, the proposed beach nourishment volume computed to mitigate for this loss is not based on the best available information (e.g. long-term data compiled by both MCZM and SBPF consultants over more than 20 years). A thorough analysis of appropriate mitigation quantities should be based upon all available information and not focused on time periods that are strictly beneficial to the applicant, at the expense of downdrift property owners. The specific comments below address the shortcomings

and/or incorrect analysis contained in the updated coastal bank retreat calculations provided by Epsilon Associates:

- The information contained in Table 1 implies that past SBPF calculations regarding the loss of sediment supply caused by armoring of the Sconset Bluff have generally been consistent with the Town of Nantucket proposal presently under review. However, it should be made clear that the gabion project was denied by the Conservation Commission. During the numerous public hearings it became clear that inadequate mitigation and likely adverse impacts to downdrift properties remained concerns for a majority of the Commission. Specifically for the gabion project, Epsilon Associates, Inc. calculated the appropriate mitigation volume to be 19.1 to 19.5 CY/lf/year (these values excluded 13% of the total volume eroding from the bank due to fines, with the inclusion of fines the erosion rate is 20.8 to 22.2 CY/lf/year). In their presentation, there was never any mention that this calculation included any "overflow allowance" or extra material, as erroneously claimed in Epsilon's November 1, 2013 memorandum. Therefore, the computed mitigation requirement for this previous project proposed by Epsilon Associates was more than 33% larger than the mitigation currently proposed, and more accurately more than 50% more than currently proposed.
- While the November 1, 2013 Epsilon review is extremely critical of the long-term MCZM shoreline change analysis and the "purpose" of the CP&E sediment budget, neither criticism appears based upon sound scientific or engineering principles.
  - The primary criticism of the MCZM analysis is focused upon the claim that SBPF monitoring data "has consistently shown that shoreline erosion rates in areas where coastal banks are fronted by dunes are *significantly higher* than shoreline [change] rates in areas with an eroding coastal bank." There is no quantitative analysis provided to support this conclusion and data from the monitoring certainly demonstrates that many dune areas (e.g. Codfish Park) have experienced significantly less shoreline retreat than the area along the Sconset Bluff.
  - According to Epsilon Associates, MCZM shorelines indicate shoreline change rates within the project area are between 4.0 and 9.7 feet per year, which would indicate that the proposed "bluff crest" erosion rate of 4.6 feet per year is well below the average for this shoreline and not applicable to utilize as a rate for mitigation calculations. This is further supported by the Ocean and Coastal Consults, Inc. (SBPF engineering consultant) analysis that indicated a shoreline erosion rate of ~8 feet per year or about 20.7 CY/lf/year (from the September 2010 Siasconset Coastal Bank Stabilization and Beach Preservation Project Alternatives Analysis submittal on behalf of SBPF to Nantucket Conservation Commission).
  - Epsilon also indicates that the MCZM analysis "is subject to uncertainty"; however, they never describe or attempt to quantify the uncertainty of their own analysis. Based on sound scientific principles, the MCZM analysis typically has an uncertainty on the order of  $\pm 0.4$  feet per year (an order of magnitude below the observed shoreline recession rate). The Epsilon analysis also has inherent uncertainties and based on utilizing "top of bank" as their baseline, these uncertainties are magnified due to interpretation problems associated with aerial photography (as well as all of the other uncertainties related to the typical MCZM shoreline change analysis). As presented, the 1994 top of bank was delineated from an aerial photograph – an analysis technique that is scientifically invalid for

determining coastal change. As stated during many previous Conservation Commission meetings regarding other similar SBPF filings, a lower rate of bluff erosion relative to shoreline erosion is not possible, as this initially causes an over-steepening of the coastal bank and eventually leads to the crest of the coastal bank being seaward of the beach, which of course is not possible.

- Figure 1 provided in the Epsilon memorandum provides some of the best evidence of how use of "coastal bank crest" data misrepresents ongoing processes and appropriate shoreline change rates. Specifically, a cursory review of the figure indicates that erosion rates for Lots 91-107A between 1994 and 2003 were relatively modest over this 9-year period, but certainly accelerated over the 2003-2013 time period. However, Epsilon chose to utilize the 1994-2013 time period which clearly yields a lower erosion rate that is not representative. Other data (e.g. the Woods Hole Group, Inc. surveys of bluff position) demonstrate a recent steepening of the coastal bank in the project area, which is clearly evident and likely the reason for the Town's involvement and desire to stabilize the bluff. However, the analysis of the bluff crest by Epsilon does not incorporate this ongoing over-steepening followed by episodic collapse mechanism in the analysis. The episodic nature of the bluff failure mechanism is the primary reason why coastal scientists/engineers do not use the coastal bank crest position as a valid proxy for shoreline retreat rates. The subjective data analysis provided by Epsilon does not provide confidence that the conclusions are robust and conservative relative to Town of Nantucket concerns for neighboring and downdrift properties.
  - Criticisms of the 2006 CP&E sediment budget (another consultant report produced for SBPF) are completely unfounded, as this effort represents the only significant effort by SBPF to use 'best available measures' to quantify sediment transport along the Sconset Bluff region. The methodology is identical to the type of analysis presented by Epsilon; however, it also is informed by coastal processes data and modeling. This analysis indicated the bluff/beach system in the project region provides approximately 24.2 CY/lf/year from the sediment budget developed for the period from 1995 to 2005.
  - Due to the inter-annual variability in shoreline change rates within the project area, it is clear that the substantial accretion observed in 2013 is not typical for this region. In situations similar to this, coastal scientists/engineers typically employ a least-squares fit to all of the long-term shoreline change data to determine shoreline change. The method currently presented by Epsilon and incorporated into the Town application is misleading and underestimates the actual impact to downdrift beaches that will be caused by this project. Available shoreline positions for every Quarterly Survey should be provided as the basis for this analysis. Use of bluff crest position data should be discontinued, as it is misleading and is not considered sound scientific practice.
  - Epsilon has never incorporated any of the sediment placement by SBPF (i.e. bank and beach material) into the bank erosion computations. This leads to an additional (although likely small) underestimation of coastal bank and/or beach erosion rates.
- As mentioned in previous meetings, the 2013 shoreline position is aberrant relative to recent historic trends dating back to the inception of SBPF (circa 1994). For example, the Woods Hole Group, Inc. survey data indicates that the 2013 shoreline in the project area has accreted since 2011. If this were the long-term trend, there certainly would be no need

for the project, since natural forces would be re-building the beach. Of course, this is not truly the case and this one-time accretion should be viewed as an outlier and the data associated with this time period should not be utilized without a thorough review of historical trends from all time periods monitored. This point is highlighted by the following quote from the most recent Woods Hole Group monitoring report:

*In the project area the shoreline along all profiles, except 89.2, advanced likely due to a portion of sediment eroded from the bluffs remaining on the beach*

Therefore, utilization of the 2013 shoreline position for mitigation calculations is misleading and incorrect. Instead, SBPF and the Town should provide the data and a more complete analysis (as described above) to develop an accurate long-term shoreline trend should be utilized as the basis for the *minimum* amount of mitigation nourishment required.

- According to the plans, as well as the presentation at the last Conservation Commission meeting, the project design team has opted for placing the proposed armoring seaward of the coastal bank. Based on the design, it appears that the proposed structure will extend approximately  $\pm 40$  feet onto the beach. Therefore, the Town should also consider mitigation for the loss of sediment supply associated with the beach, since the proposed structure is effectively preventing a substantial portion of the beach sediments from remaining a part of the active littoral system.
- Based on the project plans, the properties likely to suffer increased erosion at the north and south ends of the geotube structure are Lots 109, 113, 115 (to the north), and 83 (to the south). The impacts of the structure on properties immediately adjacent to the shore protection structure will experience increased erosion as a result of wave energy focusing and exacerbated wave reflection. This increase on local erosion rates is often referred to as coastal structure "end effects". A stand-alone mitigation strategy to *proactively* address these "end effects" should also become part of the Town's overall mitigation strategy. Similar to the mitigation for the overall bank erosion, the volume of material should be placed annually, regardless of monitoring results. The volume of sediment associated with the "end effects" should not be considered part of the overall mitigation volume related to typical bank erosion, as the "end effects" represent a local acceleration in erosion rates directly caused by the structure.
- Numerous discussions of shoreline and/or coastal bank monitoring have been debated for nearly 20 years at Sconset. Certainly, closely spaced transects should be considered directly adjacent to the proposed structure to ensure that the "end effects" are effectively monitored. As mentioned above, there is a significant concern that near-term end effects could immediately jeopardize the structures to the immediate north and south of the project. According to the July 2013 coastal armoring NOI submitted by SBPF, dwellings on Lots 109 and 113 are within 13 and 18 feet of the coastal bank crest, respectively.

#### Temporary Structure Alternatives

At the October 30, 2013 Conservation Commission hearing there was a discussion about reexamination of design alternatives to ensure the least impactful solution was brought forward for the temporary protection of Baxter Road to allow the Town time to secure alternative means of access. Reviewing the additional information submitted by Milone & MacBroom on November 1, 2013, it does not appear any serious consideration was given to alternative designs that could minimize impacts to adjacent properties. As we have pointed out previously, Geotube Alternative 1 – Jute Fiber Logs have been shown to work over a number of years at 79 Baxter Road. The Jute Fiber Logs approach does require regular maintenance, however that is a direct

result of the way the system was designed to function. The Jute Fiber Logs were designed to release sediment to the nearshore system thereby causing minimal adverse impacts to the ability of the coastal bank to act as a sediment source for downdrift portions of the shoreline. Epsilon Associates, Inc. characterizes the jute design as follows in a June 13, 2008 letter to Conservation Commission in support of an extension request for the Jute system;

*when a portion of the jute bag is ruptured by wave action resulting in a rapid contribution of the contained sediment. Both of these mechanisms of sediment contribution have often been mischaracterized as a "failure" of the terraces. This is an inappropriate characterization since the terraces were specifically designed by the proponent and subsequently conditioned by the Commission to contribute sediment to the nearshore system by these two mechanisms while minimizing project related debris in the nearshore system. Therefore sediment release to the nearshore system during storm events is in fact a successful result of the terrace design.*

Over the winter of 2012/13 the Jute Fiber Logs were damaged by storms and 30 feet of bank at the north end of the 79 Baxter Road was eroded. Examining aerial photographs suggests that offsets along bank face resulted in focusing of wave energy at the ends of the Jute Fiber Logs. The localized increase in wave energy resulted in end effect scour and bank erosion on neighboring properties which led to the system being flanked. Flanking and end effect scour are the outcome of a structure not been properly designed and then mitigated for. In past hearings Epsilon has indicated that the volume of mitigation associated with the jute project were on the order of the volumes currently being proposed and thus low mitigation volumes are likely a key factor in the damage at the north end of the project. The erosion of the bank illustrates how critical mitigation volumes are to ensure the success of a project. For any project along the Sconset Bluff to succeed, it is critical that nourishment volumes be carefully considered and appropriate volumes be placed on the beach; otherwise the structure will fail and in the interim, the structure will result in significant impacts to downdrift properties. The Town of Nantucket should not be protecting Baxter Road at the detriment of neighboring property owners whom the Town's project is seeking to help by preserving Baxter Road.

During the October 30<sup>th</sup> hearing the commission members also requested additional information about hybrid geotextile/jute designs, cases where similar systems have failed and cases where similar system have succeeded. That information was not provided at the November 6<sup>th</sup> meeting, but rather the Town DPW indicated that they do not believe a jute system would work due to the level of design risk. However, no information regarding some type of hybrid alternatives that would be more appropriate for short-term bank protection have been provided and we suggest that the Town be asked to re-visit the alternatives analysis.

#### Geotube Design Considerations

It is clear that scour represent a critical concern in the design of the proposed structure. Scour in front of the structure is directly tied to the incident wave energy, wave reflection, and volume of sediment available within the littoral system to keep the structure outside of the active surf zone. It has been mentioned that the proposed system was optimized to minimize seaward encroachment onto the beach. However, a quick look at the reflection coefficients for a structure of this type reveal that wave reflection off the structure is going to be significant. Using the effective structure slope, the reflected waves range from 70- to 90-percent of the incident wave height, on a micro scale of each geotube lift, the reflected waves approach 100-percent of the incident wave height. It is clear that the design of this structure is going to result in the lowering of the beach height and reduction in beach width in front of the structure, which will allow larger waves to impact

the structure over future storms. The details of the design need to be reconsidered to minimize impacts to the coastal system while providing the necessary protection to Baxter Road.

There does not appear to be any design features with the proposed geotube design to address and minimize end effect scour on neighboring properties. Immediately to the north and south of the proposed project, the homes at 109, 113, and 115 Baxter Road are within 11 feet, 13 feet, and 18 feet of the end of the coastal bank at the end of the proposed geotube structure (Table 1 from the SBPF July 2013 NOI). The proposed geotube design and mitigation plan has not alleviated or even minimized the potential impacts to these dwellings. If the proposed structure is constructed, it will cut off the natural supply of bank and beach sediment from the littoral system, starving the shoreline immediately north of and south of the structure resulting in an acceleration of ongoing erosion. In addition the end of the structure will focus wave energy on the adjacent coastal bank further accelerating the erosion along the adjoining properties. The project as proposed is directly jeopardizing the adjoining properties and dwellings.

We remain concerned with the Town of Nantucket attempting to permit and construct a coastal structure that will result in significant wave reflection due to the vertical and hard nature of the geotextile tubes, a structure that will cut off the natural supply of sediment from the littoral system in coastal environment where the shoreline is retreating in excess of 5 feet per year, and a proposed mitigation plan that is not sufficient to offset the adverse project impacts.

Sediment Contributions

As we have previously stated, the proposed geotubes structure is designed to act in a similar manner to a revetment by isolating the coastal bank and beach from erosive forces. By cutting off the supply of material from the coastal bank to the littoral system the project will shift and magnify erosion onto adjacent Town owned beach and neighboring properties along the coastal bank which already face significant erosional concerns. The Town of Nantucket should not put any properties at greater risk due to inadequacies in the mitigation planning and analysis.

The following table illustrates the current volumes of sand proposed as part of the geotube project:

| Placement Location  | Rate of Placement (CY/LF) | Length of Placement (Feet) | Total Volume (CY) |
|---------------------|---------------------------|----------------------------|-------------------|
| Inside Geotubes     | 4.22 (each tube)          | 1,500                      | 25,320            |
| Leveling Sand       | 2.3                       | 1,500                      | 3,450             |
| Nourishment Sand    | 14.3                      | 1,500                      | 21,450            |
| <b>TOTAL VOLUME</b> |                           |                            | <b>50,220</b>     |

\*Reproduced from MMI's October 25, 2013 letter to the Conservation Commission

- The first and largest volume listed within the table is the 25,320 CY of sediment contained within the geotubes. The sediment within the geotubes should not be considered mitigation nourishment, since the sediment is isolated from the littoral system within the geotubes and provides no mitigation value to the shorelines updrift and downdrift of the proposed structure.
- The leveling sand should not be considered mitigation nourishment; the sediment is isolated from the littoral system behind the geotubes and the geo-textile scour apron.
- The 18 CY/lf (27,000 CY) of excavated beach material associated with the placement of the fourth geotube below the existing beach face is currently available to downdrift beaches within the littoral system should erosion occur, if the displaced beach

material is utilized for leveling of bank, sand cover, and/or mitigation nourishment it represents a loss of available beach material from the littoral system and hence should be appropriately mitigated for with additional beach nourishment.

- The geotextile selected for the structure requires a two foot cover of sand over the entire structure to prevent UV damage. The two foot sand cover has been characterized as a portion of the annual mitigation by Milone & MacBroom. The placement of mitigation nourishment over the top of the geotubes up to an elevation of +28 feet (16 feet above the 100-Year base flood elevation) places a significant volume of the mitigation outside of the active littoral zone, thereby reducing the effectiveness of the mitigation to moderate the downdrift impacts. If sand cover is required to prevent UV damage over the 3 to 5 year design life of the structure, then the additional volume of sediment required should be provided for independently of the mitigation. Therefore, sand placed on the geotube structure should not be considered mitigation.

It is clear that the current volumes of sediment associated with the proposed structure (see table above) should not be considered as part of the annual mitigation nourishment for the structure. Mitigation should be addressed separately.

#### Conclusions

Reviewing the narrative presented within the NOI for the 2013 Baxter Road Temporary Stabilization Application, as well as the follow-up documentation provided by Milone & MacBroom (letter signed by Nicolle Burnham, P.E. dated November 1, 2013 with attachments), illustrates that regardless of the stated temporary and minimal nature of the proposed project, the proposed geotube structure will cut off the supply of material from the coastal bank to the littoral system. Failure to adequately mitigate for the project will shift and magnify erosion onto adjacent Town owned beach and neighboring properties along the coastal bank. Some of these adjacent properties are within 20 feet of the bank crest. Analysis provided by SBPF consultants indicates that the minimum annual mitigation nourishment should be on the order of 22 CY/lf/year or approximately 33,000 CY per year. This value is consistent with MCZM shoreline change data for the project region. The updated analysis provided by Epsilon Associates is technically flawed and should not be utilized by the Town as the basis for computing mitigation volumes. The *minimum* mitigation volume should provide for one-to-one mitigation of the material that is currently being provided from the coastal bank to the littoral system. It is important to note that the one-to-one mitigation does not account for any additional erosion which is likely to occur due to end effects, wave reflection, and disturbance of the coastal bank and beach during construction. The goal of mitigation is not to prevent erosion in front of the proposed structure, but to prevent the acceleration of erosion on adjacent shorelines.

In addition to mitigation concerns, additional analysis of alternatives has not been provided, monitoring details remain unclear, the failure criteria presented is nonspecific and not quantitative, additionally the details regarding construction protocols also remain unclear.

# EXHIBIT

5



*Jim O'Connell, Coastal Advisory Services*  
*P.O. Box 401, Brant Rock, MA 02020 (781) 588-0502*  
*Email: jimocconnell28@gmail.com*  
*www.JimOConnell28.wordpress.com*

November 4, 2013

Earnest Steinauer, Chairman, and  
Nantucket Conservation Commission  
2 Bathing Beach Road  
Nantucket, MA 02554

RE: Comments on Nantucket DPW & SBPA Inc's Proposed 'Stabilization of Roadway & Utilities in the Public Layout of Baxter Road' Notice of Intent and Accompanying Material

Dear Conservation Commissioners:

On behalf of the Quidnet Squam Association, Inc., I am submitting the following comments on the proposed '*Stabilization of Roadway & Utilities in the Public Layout of Baxter Road*' as described in the October 13, 2013 Notice of Intent (NOI) submitted by the Nantucket DPW & Siasconset Beach Preservation Fund, Inc. to the Conservation Commission.

Also reviewed were the October 25, 2013 'Baxter Road Temporary Stabilization Application' report, the October 1, 2013 'Attachment A: Baxter Road Stabilization Alternatives Analysis' prepared by Milone & MacBroom on behalf of the applicants, and other comments and additional information uploaded on the Town's web site November 1, 2013.

**Quidnet Squam Association**

The Quidnet Squam Association is an Association of properties owners most of whom own properties on or close to the beaches and dunes along the eastern shore of Nantucket north of the proposed project area. Because the Association member's properties are *downdrift* of the proposed project, they are concerned about possible adverse impacts to their beaches, dunes, barrier beach and developed properties in the form of potential project-related accelerated erosion and storm damage.

Although the NOI and accompanying information do not provide any coastal processes or erosion rate information for the reach of shoreline or coastal bank that is the subject of this NOI filing, based on many available technical documents and information gleaned from prior filings with the Conservation Commission, it is obvious that sediment eroding from the Sconset coastal bank (including the area of coastal bank that is the subject of this NOI) is a significant sediment source contributing to the healthy volume of beaches, dunes, and barrier beaches to the north of the Sconset Bluff, including the Quidnet Squam beaches and dunes and the barrier beach fronting Sesachacha Pond.

Selected information from several technical reports is included later in this report that documents that the Sconset coastal bank is significant sediment source to the downdrift Quidnet Squam shoreline areas to the north. Of particular note is the Coastal Planning and Engineering's (CP&E) information provided to the SBPF in their 2006 Report, Section 8, Table 10 and Figure 8 which clearly shows a significantly larger volume of sediment being transported to the north from the coastal bank, beach and nearshore areas in the project area.

#### **Proposed Project: Preferred Alternative**

The proposed project spans across multiple contiguous privately owned properties from #85 to #107A Baxter Road, as well as proposed to be constructed on the Town-owned coastal beach fronting the coastal bank. As stated, the goal of project is to maintain vehicular access and utility service to the residential properties on Baxter Road from Bayberry Lane to the Sankaty Head Lighthouse property. It is stated that work is limited to those areas where Baxter Road appears to be in imminent danger of failure from bank erosion, i.e. where the top of the coastal bank is 30-40 feet from Baxter Road in some areas and 60-70 feet in other areas.

The preferred alternative is shown on the accompanying Plans and described in the October 25, 2013 Milone & MacBroom 'Baxter Road Temporary Stabilization Application' as temporary coastal bank toe protection along 1,500 linear feet of coastal bank extending from #85 to #107A Baxter Road by the placement of four 45-foot circumference geotubes, including a scour apron and a 4 foot diameter anchor tube. The geotubes will overlap creating a 2:1 slope with the top geotube at the FEMA-mapped 100-year flood elevation of 26' MLW. The geotube revetment will encroach onto the fronting coastal beach approximately 40' and an additional 5' for the scour apron and anchor tube, thus displacing approximately 69,900 square feet of coastal beach. This design will cover approximately half of the fronting coastal beach.

A sacrificial 2' minimum sand layer will cover the top geotube to elevation 28' MLW with the sacrificial sand layer covering the seaward face of the tubes at a 2.5:1 slope.

The applicant's propose an approximate 14.3 cubic yards of sand cover per liner foot of geotube for the 1,500 linear feet of geotubes (21,450cy). This sacrificial sand cover is proposed to protect the geotubes and mitigate for the loss of the coastal bank as a sediment source.

Winter sand replenishment is proposed to occur at a rate of one cubic yard per linear foot when 50% of the height of the bottom tube is exposed. Each spring (before April 30) the two feet of sand cover will be re-established over the geotubes.

Jute netting is proposed on the coastal bank above the geotubes, with planting of the coastal bank to occur in the spring. A low berm is proposed along the roadway edge to prevent runoff that is presently causing rill erosion down the coastal bank.

The project is stated to be 'temporary' with a suggested design life of 5 years, with maintenance when necessary, and according to the NOI is intended to provide a minimum but adequate level of protection for the short-term while long-term solutions are explored and implemented.

In terms of monitoring and maintenance requirements, it is stated for example, that repair of torn geotextile will be completed as soon as the beach is accessible, and sand replenishment will be completed as soon as appropriate based on weather conditions and time of year.

**Eastern Shore of Nantucket is an Interactive System: A Littoral Cell**

Based on many available technical documents (cited in previous filings to the Conservation Commission), the coastal bank which is the subject of this filing is a major sediment/sand source contributing to the healthy volume of beaches, dunes, and barrier beaches along the Quidnet Squam shoreline areas to the north. Sediment is also cited to be transported at times towards the south; however, as cited above according to CP&E a significantly larger volume of sediment is transported north.

Thus, the eastern shore of Nantucket can be considered a 'littoral cell'. As such, the coastal banks, coastal beach, coastal dunes, barrier beaches and near-shore areas are an interactive system: Any interruption in the *volume and timing* of the sediment supply from the coastal bank to the areas to the north can potentially result in adverse impacts in terms of accelerated erosion and storm damage to the beaches, dunes, and barrier beach, and as a result possible damage to landward developed property.

**Potential Impacts to Downdrift Resources and Property**

**Additional Transects Request**

One of the 'failure criteria' stated in the filing information is 'excessive change in the updrift or downdrift beach cross section(s)'. However, importantly, the failure criterion goes on to state that '*quantitative failure for updrift and downdrift impacts is difficult to develop with certainty at this time*' (emphasis added). The criteria go on to state that, 'if annual transects suggest changes are occurring as compared to historic data collected by SBPF over the past 15+ years, the DPW will meet with the Conservation Commission staff to determine if they believe the changes are a result of the project, and an appropriate course of action will be determined'.

The applicants offer, 'if the Commission would like to have updrift and downdrift impacts monitored, the Town would be amenable to modifying the monitoring plan to include:

- Year 1 transect surveys in locations previously performed by the Woods Hole Group (WHG) in April and August; and,
- Years 2-5 transect surveys in locations previously performed by the WHG in April.

**That the transect surveys continue is an absolute necessity:** along with visual observations, transect surveys are a vital and necessary component of determining if adverse impacts are occurring to downdrift areas. We appreciate the Milone & MacBroom November 1, 2013 memo stating that transect surveying will continue and that a thorough analysis and interpretation of the data collected during the life of the project will be completed.

However, at present, and since the inception of the monitoring project in 1994, only 1 transect is monitored in the Quidnet area and 1 transect in the Squam area. Two transects along this shoreline area are clearly not sufficient to determine if adverse impacts are occurring to the Quidnet Squam areas.

1. Thus, the Quidnet Squam Association requests that Commission require not only that the *Southeast Nantucket Beach Monitoring Project* analyses by the Woods Hole Group (or other competent surveying group) continue to monitor the 44 existing beach profiles, but that several additional survey profile locations be added along the Quidnet Squam areas, and that these additional transects and all other transects be surveyed not only in April and August, but prior to and immediately following artificial nourishment and pre- and post-coastal storms.

These additional transects in the Quidnet Squam areas should extend from the nearshore area to the landward toe of the landwardmost coastal dune. Only with complete transects surveyed seasonally (following winter: April; and, following summer: August) and prior to and following coastal storms (Northeast storms and hurricanes) will sufficient data be available to attempt to quantify and make a determination if adverse impacts are occurring to downdrift coastal resources and developed property from the project.

2. In addition, the Association is requesting that the Commission require a description of how the applicant's technical consultants will distinguish between far-field adverse impacts from the geotube revetment project and natural storm-induced erosion and storm damage north of the project area, particularly along the Quidnet Squam shoreline areas.

Furthermore, a thorough data analysis and conclusions from each transect monitoring episode should be conducted by the Woods Hole Group as they occur in order to understand the evolution of the project and adjacent shorelines. An annual report will also be forthcoming.

#### Sand Nourishment Requirement

It is stated that 'winter replenishment will occur at a rate of one cubic yard per linear foot when 50% of the height of the bottom tube is exposed. Each spring the two feet of sand cover will be re-established over the geotubes.'

The volume and timing of sand proposed in the 'sand nourishment criteria' is simply not adequate to prevent and ensure downdrift adverse impacts will not occur as a result of the project.

The initially placed 14.3 cubic yards of sand per linear foot will be deposited *seaward* of the coastal bank over the geotubes, basically on the coastal beach and/or where the coastal beach would be absent the geotubes. The geotubes and sand nourishment displace approximately half of the summer beach area. The winter beach profile will be even narrower.

In this more seaward location the sand nourishment can be anticipated to erode faster during storm conditions than if the sediment were being eroded from the more landward semi-compacted coastal bank. In natural erosive action, the toe of the coastal bank would erode providing source sediment to the fronting beach; shortly thereafter – oftentimes during a moderate to major coastal storm and during each subsequent storm high tide storm cycle – the

upper portions of the coastal bank would slump providing additional natural sediment nourishment to the fronting beach that will subsequently be transported to adjacent and downdrift beaches. During northeast storms this naturally eroded source sediment is introduced continuously over several tidal cycles.

The proposed winter replenishment of 1 cubic yard per linear foot when 50% of the height of the bottom tube is exposed is not adequate to provide a continuous stream of source sediment to downdrift beaches, dunes and barrier beaches *during* a coastal storm; thus, the project will not prevent or minimize adverse downdrift impacts during a coastal storm.

This adaptive approach of adding winter replenishment of 1 cubic foot of sand suggests that the 14.3cy/linear foot of sand cover is anticipated to be eroded due to storm action.

One cubic yard per linear foot will more than likely completely erode early during storm conditions, leaving no further sand volume available to be transported downdrift – *during* a coastal storm - which is precisely when the littoral system requires the sand to reduce storm wave energy and prevent or reduce storm damage to downdrift areas.

This more than likely will result in a wave of erosion or 'hot spot' of erosion and/or storm damage moving alongshore downdrift. If a 'hot-spot' or erosion wave is moving downdrift, replacing sand over the geotubes 'as soon as appropriate based on weather conditions' and placing only 1 cubic yard per linear foot will not prevent subsequent erosion or storm damage as a result of an erosion wave.

Furthermore, the volume of sand nourishment remains a concern in that it may be lower than the volume that would erode during an excessively active coastal storm season. The proposed sand mitigation volume is an 'average' – which is generally acceptable; however, in this exceptionally high energy area, the sand mitigation volume may be too low to accommodate an above average coastal storm season. If additional sand volumes are not available 'during' a coastal storm, downdrift adverse impacts will more than likely occur.

In addition, the 18cy/lf of sand that will be removed from the beach to accommodate the placement of the bottom geotube, scour pad and anchor tube should be added to the 14.3cy/lf of sand cover or added during the winter or following storms. This 18cy/lf although being used in the placement of the geotubes is lost to the system in that it will be used as part of the geotube leveling pad. Only if the geotubes fail will the 18cy/lf be made available to the littoral system.

Thus, the concern of the Quidnet Squam Association is possible adverse impacts if the proposed 'sand mitigation plan' does not perform as anticipated by the applicant's consultants. While we appreciate the proposed sand mitigation plan, *the placement of off-site mitigation sand seaward of the coastal bank and particularly the timing of sediment delivery to the north cannot mimic natural processes*, and could result in adverse impacts to downdrift properties.

3. Thus, the Quidnet Squam Association is requesting a 'beach and dune sand mitigation plan' for their shoreline area to immediately be able to address the event that adverse impacts are noted along their section of the Nantucket eastern shore.

This is somewhat similar to the fallback mitigation proposal of adding more sand to the ends of the geotube revetment if significant end scour occurs despite the initial additional sand proposed to be placed at the geotube revetment ends to attempt to mitigate end scour. The possibility of adding more geotubes at the flanking ends is also proposed.

The logistics (e.g. reserve sand stock piling) and commitment of providing sand mitigation along the Quidnet Squam shoreline and dune areas, if and when necessary, must be clearly outlined and deemed doable by the Commission and involved project specialists. As part of this *extended sand mitigation plan*, sand placement should not only be addressed in the project and immediately adjacent areas due to possible flanking, but also along the Quidnet Squam beach and dune areas in the event project-related erosion and storm damage are noted.

#### Regulatory Compliance: Nantucket and State Wetlands Protection Regulations

##### Proposed Project Description

The proposed project is, in part, to construct a 1,500 linear foot 'temporary' coastal engineering structure, i.e. geotube revetment, on a sediment source coastal bank extending onto the fronting coastal beach, including mitigating sand cover, to protect a roadway and utilities from storm induced erosion.

The initial application proposed two distinct sections of tubes only at locations where roadway failure appears imminent and where no structures currently exist. However, as stated, in the NOI, the issue of 'flanking' cannot be resolved in the gap area between the 2 systems; therefore, a continuous run of geotubes from #85 to #107a Baxter Road is now proposed. Thus, the proposal now includes areas of the roadway that are and are not presently threatened from erosion.

##### Coastal Banks and Coastal Beach: Regulatory Compliance

The project proposes to armor a sediment source coastal bank. *Coastal banks* are defined, in part, as 'the seaward face or side of any elevated landform, other than coastal dune, which lies at the landward edge of a coastal beach, coastal dune, land subject to tidal action or coastal storm flowage, or other coastal wetland' in the Nantucket and MA Wetlands Regulations @ PART I, s. 1.02 DEFINITIONS and S. 10.30(2), respectively.

The Nantucket Wetlands Regulations @ Part 2: s. 2.05(B)(1) states, in part, 'No new bulkheads, coastal revetments, groins, or other coastal engineering structures shall be permitted to protect structures constructed, or substantially improved, after 8/78 except for *public infrastructures*' (emphasis added).' The Nantucket regulations go on to state, '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.'

other transects be surveyed not only in April and August, but prior to and immediately following nourishment and pre- and post-coastal storms;

2. Require a description of how the applicant's technical consultants will distinguish between far-field adverse impacts from the geotube revetment project and natural storm-induced erosion and storm damage north of the project area, particularly along the Quidnet Squam shoreline areas. This evaluation should not be solely between the Town DPW and the Conservation Commission as proposed, but an independent, unbiased technical consultant should be retained to provide an in-depth analysis and recommendation.
3. Require that a 'beach and dune sand mitigation plan' for the Quidnet Squam shoreline areas be formulated before any project is permitted in the event that adverse impacts are noted along that section of the Nantucket eastern shore. The logistics and commitment of providing sand mitigation along the Quidnet Squam shoreline and dune areas, if and when necessary, must be clearly outlined and deemed doable by the Commission and involved project specialists. For example, a sand stockpile reserve in the Quidnet Squam area for immediate post-storm mitigation if adverse impacts are linked to the armoring of the Sconset coastal bank may be appropriate.

The Quidnet Squam Association appreciates the efforts of the Town and the SBPA and have not as yet taken a position on the *Stabilization of Roadway & Utilities in the Public Layout of Baxter Road* project. They are, however, significantly concerned about possible adverse impacts to their downdrift beaches, dunes, barrier beach and possibly landward development that could be caused by the interruption of a major source sediment supply, and a proposed 'sand mitigation plan' that does not take the Quidnet Squam shoreline and coastal resources directly into consideration.

The Association needs assurances from the Town and SBPF that adverse impacts to their property will not occur as a result of the project. Although Milone and MacBroom state 'following this adaptive approach, there is no reason to expect adverse impacts to downdrift beaches', there is actually a high likelihood of potential adverse impacts to downdrift beaches and dunes due to the timing of the introduction of the mitigation sand, as described above.

However, if adverse impacts are noted the Association needs assurances that the adverse impacts will be mitigated as soon as possible. These assurances may be in the form of a technical analysis by the applicant's consultants and an independent technical specialist on how to document potential adverse downdrift impacts which will occur if the major sediment supply, volume and frequency of sand introduction to the littoral system, is interrupted. At the present time these assurances do not exist.

We request that the Conservation Commission require a Quidnet Squam area-specific mitigation plan; an explanation of how the applicant's consultant's will distinguish between natural and project-specific downdrift adverse impacts; and, continued and enhanced beach and dune

monitoring. These should be committed to writing as part of this proposal before considering action of the proposal.

On behalf of the Quidnet Squam Association, we appreciate the opportunity to provide these important comments and will continue to work with the Commission, the Town and the SBPA in hopefully arriving at a mutually agreeable approach to meet all ultimate goals while ensuring no adverse impact to downdrift properties and coastal resources.

Yours Truly,

Jim O'Connell, Coastal geologist/Coastal Land-use Specialist  
Coastal Advisory Services



*Jim O'Connell, Coastal Advisory Services*  
*P.O. Box 401, Brant Rock, MA 02020 (781) 588-0502*  
*Email: jimconnell28@gmail.com*  
*www.JimOConnell28.wordpress.com*

Cc: Nantucket Quidnet Squam Association, c/o of Richard Peterson, President  
Atty Dirk Roggeveen, Nantucket

Partial References

Gutman, A.L., Goetz, M.J., Brown, F.D., Lemowski, J.K., and Tiffeny, Jr., W.N., 1979,  
Nantucket Shoreline Survey, M.I.T. Sea Grant College Report, MITS 79-7, Cambridge, MA

Tiffney, W.N. and Andrews, C, 1990, 'Sesachacha & Sankaty: Pond Opening and Erosion on  
Nantucket's Eastern Shore', in Historic Nantucket, V. 38, No. 1, Spring, 1990.

---

# EXHIBIT

6

---

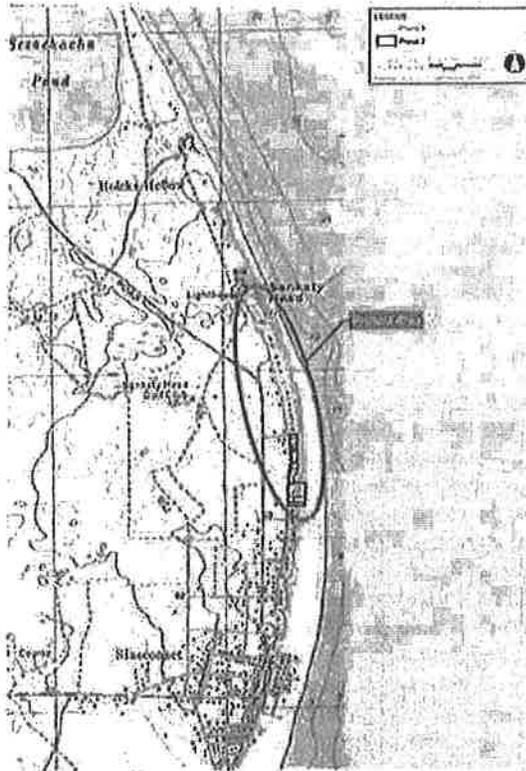
## Notice of Intent

(M.G.L. c. 131, §40) and Town of Nantucket Wellands Bylaw Chapter 136

---

Rec. @ meeting  
by D. Anna Atterton

### BAXTER ROAD AND SCONSET BLUFF STORM DAMAGE PREVENTION PROJECT



**Submitted to:**  
Nantucket Conservation Commission  
2 Bathing Beach Road  
Nantucket, Massachusetts 02554

**Submitted by:**  
Sconset Beach Preservation Fund  
c/o Jenny Garneau  
18 Saspana Road  
Nantucket, Massachusetts 02554

**Prepared by:**  
Epillon Associates, Inc.  
3 Clock Tower Place, Suite 250  
Maynard, Massachusetts 01754

**In Association with:**  
Ocean and Coastal Consultants, Inc.  
475 School Street, Unit 9  
Marshfield, MA 02050

July 2, 2013

## 2.0 Alternatives for Road and Bluff Protection

This section provides a summary description of ten alternatives for preventing erosion of the coastal bank at Sconset.

### 2.1 *Geotextile Tubes*

Geotextile tubes (geotubes) are fabricated from high strength, woven polyester or polypropylene sewn together into a tube shape and filled with sand. A conceptual geotube design for a 50-year storm would consist of at least four 30-foot-circumference geotextile tubes installed in a terraced alignment and covered with clean sand fill. Construction would require excavating the existing profile to +4.5 feet MLW and installing a 3-foot-circumference anchor tube and scour apron. Geotubes would then be installed and filled on the excavated terraces to approximately 5 feet tall and 11 feet wide. After the geotubes were filled, a clean sand fill would be placed to a top elevation of approximately +23.5 feet MLW. The sand fill would be placed on a 1 vertical: 2.5 horizontal slope to meet existing grade while maintaining a continuous one foot thick sand cover over the filled tubes.

Geotextile tubes are not well-suited to a high energy environment like Sconset. Too much scour at the toe could potentially lead to structural failure (even when a scour apron is included in the design). Geotubes are susceptible to damage from vandalism, debris, and storm waves; storm-driven debris may puncture and tear the tube. For this reason, maintenance costs for geotubes tend to be higher than for other alternatives. When ripped open by storm waves, geotextile tubes may fall in place, emptying sand onto the beach and possibly releasing geotextile material to the coastal environment. The release of sacrificial sand would not have any adverse environmental effects since clean, beach-compatible sand would be used to fill the tubes. However, replacement of the geotube would be expected to be required on a frequent basis (one or more times annually). Such replacement often cannot be accomplished between successive storms, potentially leaving the bank vulnerable to wave-induced scarping at the toe (and subsequent slumping of the upper bank, which undermines vegetative stabilization that otherwise works) at the time when protection is most needed. For these reasons, geotubes are not considered a viable long-term erosion control solution.

### 2.2 *Beach Nourishment*

Beach nourishment would involve the placement of approximately 2.6 million cubic yards of sand on Sconset Beach. The nourished beach would be approximately 200 feet wide with a berm height of 12-16 feet above MLW. Sand would be obtained from an offshore borrow site; a likely candidate would be the offshore shoal system known as Bass Rip, though other potential sites could also be evaluated. The wider beach would absorb and dissipate wave energy, thereby increasing protection to infrastructure and property threatened by erosion and storm damage. Additionally, the wider beach would potentially

**Patel, Purvi (EEA)**

---

**From:** Emily MacKinnon [emily@nantucketlandcouncil.org]  
**Sent:** Tuesday, September 23, 2014 9:16 AM  
**To:** Patel, Purvi (EEA)  
**Cc:** Mahala, Jim (DEP); Kouloheras, Elizabeth (DEP); Haney, Rebecca (EEA); 'Jeff Carlson'; rickatherton@comcast.net; Steven@CohenLegal.net  
**Subject:** MEPA Comments EEA# 15240  
**Attachments:** NLCMEPAcomments.pdf

Dear Ms. Patel,

Please accept the attached document as a public comment for the Baxter Road and Sconset Bluff Stabilization Project (EEA# 15240).

Please let me know if you have any questions.

Thank you for your time,  
Emily

Emily MacKinnon  
Resource Ecologist  
Nantucket Land Council, Inc.  
(508) 228 2818  
[emily@nantucketlandcouncil.org](mailto:emily@nantucketlandcouncil.org)



## Nantucket Land Council, Inc.

Six Ash Lane  
Post Office Box 502  
Nantucket, Massachusetts 02554

508 228-2818

Fax 508 228-6456

[nlc@nantucketlandcouncil.org](mailto:nlc@nantucketlandcouncil.org)

[www.nantucketlandcouncil.org](http://www.nantucketlandcouncil.org)

### Board of Directors

Lucy S. Dillon  
*President*  
Paul A. Bennett  
*Vice President*  
William Willet  
*Vice President*  
Howard N. Blitman  
*Treasurer*  
Susan E. Robinson  
*Clerk & Assistant Treasurer*  
Karen K. Borchert  
Larry Breakiron  
William S. Brenizer  
Karen K. Clark  
Sara P. Congdon  
William M. Crozier, Jr.  
Philip B. Day  
Christine Donelan  
Robert Friedman  
Nancy Gillespie  
Wade Greene  
Mary Heller  
Charles A. Kilvert III  
Laurel Ried Langworthy  
Peter McCausland  
Eileen P. McGrath  
Paul P. Moran  
Carl H. Sjolund  
H. Brooks Smith  
James W. Sutherland, Ph.D.  
Peter Watrous  
Jon Wisentaner

### Honorary Directors

Jean Haffenreffer  
Suzanne Mueller

### Staff

Cornac Collier  
*Executive Director*  
Emily L. MacKinnon  
*Resource Ecologist*  
Linda Sperry  
*Development Director*

September 22, 2014

Purvi P. Patel, EIT  
Massachusetts Environmental Policy Act (MEPA) Office  
Executive Office of Energy and Environmental Affairs  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Re: Baxter Road and Sconset Bluff Stabilization Project (EEA# 15240)

Dear Ms. Patel,

The Nantucket Land Council Inc. is a non-profit, environmental organization, which is supported by more than 1800 members. We have been active participants throughout the Nantucket Conservation Commission public hearing process for the Baxter Road project. In cooperation with our consultants, Applied Coastal Research and Engineering (ACRE), we submitted eight comment letters and significant oral testimony. We have reviewed the Environmental Notification Form (ENF) submitted by the Siasconset Beach Preservation Fund, and believe that several factors lead to the need for an Environmental Impact Report (EIR). With technical input from ACRE we submit the following comments and concerns for your review of the ENF.

### Project Segmentation

The 900-foot geotube revetment (approved as a temporary emergency project) that is the subject of this ENF, is only the first phase of the overall revetment structure that has been proposed along the Sconset shoreline. Currently before the Nantucket Conservation Commission is a Notice of Intent, submitted by SBPF, for a 4,200 foot long rubble mound revetment. The proposed revetment varies in material specification from the emergency geotube revetment, but maintains similar design layout and vertical extents, which cover the entire upper beach profile and the lower coastal bluff along Sconset Beach (up to elevation +26.0 feet MLW). The bluff along Sconset is the largest contributor of sediment to the littoral system which runs from Great Point (north) to Madaket (south and west). To only assess a 900-foot section of the revetment, rather than the full 4,200-foot project, is both short sighted and clearly project segmentation. Artificially reducing and evaluating the shortened project extents, limits the ability of regulators, scientists, engineers, and the public to accurately evaluate and judge whether the project as a whole meets the Local, State and Federal regulations.



The design details, construction protocols, and mitigation that have been proposed for the 900-foot revetment do not accurately or even directly scale up when the overall project is 5-times larger, especially on an eastern facing dynamic coastline such as Sconset. The impacts from isolating and disrupting the natural supply of sediment, from the largest sediment source within the littoral system, will be seen across the entire littoral cell (which stretches for 25 miles). The solutions that have been proposed for the smaller scale 900-foot project will not scale up and will directly cause the loss of sediment to neighboring beaches, bluffs, dunes, and inter-tidal zones, hence affecting endangered and protected species, pristine natural habitats, homes, and infrastructure (private, Town, and State). This is why the entire revetment project is required by State and Federal regulations to be evaluated as a whole, rather than focusing on each segment as it is proposed. The issuance of an emergency permit does not justify nor allow for the review of the overall revetment project, and without the full evaluation, the smaller-scale 900-foot project only represents a portion (i.e. segment) of the proposed armoring of the Sconset Bluff by SBPF.

#### **MHW**

There have been numerous discussions about whether the Emergency Geotube project was conducted seaward of the MHW (within Chapter 91 jurisdiction). From the photographic evidence, it is clear that violations took place. In recent discussions with the permitting agencies, it has been clear that the State concurred that MHW violations took place, however during the Consent Order negotiations with the project Applicant the issue was set aside in lieu of numerous other violations by the project Applicant. This fact alone is indicative of the need for an Environmental Impact Report to appropriately assess the impacts of this type of short or long-term erosion control over an expanded footprint. The MHW issue is significant in regards to the assessment of project impacts on nearshore regions, intertidal beach, downdrift shorelines and the overall littoral system. Further limiting and segmenting the scope of regulatory review on this project confines the true assessment of the impacts on the physical system and biologic communities along Sconset Beach. The photographic evidence that was supplied to Massachusetts Department of Environmental Protection has been attached for your review.

#### **Temporary vs. Permanent**

The intensity of adverse impacts to protected resource areas is clearly tied to the time that the proposed structure is in place. Throughout the Notice of Intent process there was a lot of confusion regarding the proposed time frame for the project. When the Notice of Intent application was filed with the Nantucket Conservation Commission in October 2013, the Town of Nantucket and the Siasconset Beach Preservation Fund were listed as joint applicants for the project. In multiple memos and letters submitted to the Commission in the months that followed, the Town, as well as Milone and MacBroom who were representing the Town and who submitted the project design plans for the project, clearly stated the purpose of the proposed geotube project to be a temporary measure affording protection to Town infrastructure for 3-5 years (see below).

October 1, 2013 Memorandum from Nicolle Burnham, Milone and MacBroom, Inc. to Kara Buzanoski, Director of DPW, Town of Nantucket, Re: Alternative Analysis Summary:

Design Criteria

*For the purposes of MMT's work, measures installed will be considered temporary and intended to provide some level of protection for the short term, while long term solutions are considered by the SBPF and the town. The town has requested that the measures implemented under MMT's work consider a three year life. Given the varied erosion rates from year to year it is not possible to guarantee a specific design life of any stabilization measure here.*

October 25, 2013 Narrative and Attachments to accompany Notice of Intent Application by Nicole Burnham, Milone and MacBroom, Inc.

2. Project Purpose and Goal

*The goal of the project is to maintain vehicular access and utility service to the residential properties on Baxter Road from Bayberry Lane north to the Sankaty Head Lighthouse property. Work is limited to those areas where Baxter Road appears in imminent danger of failure from the bank failure. Specifically, these areas are 85 to 107a Baxter Road. Work under this application is specifically proposed as temporary and intended to provide a minimum but adequate level of protection for the short term while long term solutions are explored and implemented. The town requests that the measures proposed consider a design life of about five years.*

November 13, 2013 Letter from Kara Buzanoski, Director of DPW, Town of Nantucket to the Conservation Commission, Re: Project Description Sconset Bluff Stabilization:

*The tubes will be installed for a temporary period of time so as to allow the Town of Nantucket sufficient time to address moving the Baxter Road public right of way, the municipal water mains and services and the municipal sewer mains and services...It will be maintained until Baxter Road is relocated or the three year Conservation Commission Order of Conditions, and as extended by the Conservation Commission, has expired, whichever time period is shorter.*

December 3, 2013 Emergency Certification Request by Milone and MacBroom, representing the Town of Nantucket, to the Nantucket Conservation Commission:

Justification of Emergency

*...The town is simultaneously pursuing relocation of Baxter Road as a long-term solution to the bluff erosion. The stabilization proposed under this application is intended to be a temporary measure to maintain the existing roadway until such time as a new road can be designed and permitted.*

After construction of the geotubes was completed under an Emergency Certification, the Siasconset Beach Preservation Fund and their representatives began presenting the proposed project as permanent (see below).

April 25, 2014 Responses To Questions From Nantucket Conservation Commission And The Public Asked At Public Hearings On March 19 and April 2, 2014, by Epsilon Associates, representing the Siasconset Beach Preservation Fund, to the Nantucket Conservation Commission:

e) Explain whether the project is temporary or permanent.

*...This project will serve as an "interim" protection system covering the time period until the requested Order would either be replaced by a subsequent Order by the Commission for an expanded coastal engineering structure to protect all threatened portions of Baxter Road or it becomes moot due to a total*

*failure of the bluff. Removal of this "interim" geotube project is proposed only if there is a failure of the protection system triggering such under the Order, or if a long-term, expanded coastal engineering structure replacing it is not approved.*

It is clear that the two applicants for this Notice of Intent have very different goals and objectives for the proposed project. This makes it very difficult for regulatory agencies, and for the public, to evaluate adverse impacts, appropriate mitigation, failure criteria, etc. It is unclear whether this proposal should be considered temporary or permanent, and as the Town was not a party to the OOC appeal that has triggered the MEPA filing, it is also unclear whether the Town will be a responsible party for the project. Additional information should be required through an Environmental Notification Form clearly explaining the long-term intentions and proposed extent of coastal armoring at this site.

#### Calculation of Average Annual Volumes of Eroded Material

Throughout the ENF, the volume of sediment provided as part of the Sand Mitigation Program plays an important role in the justification of the geotube revetment project relative to the State and Local Wetland Regulations. The proponent states numerous times that the mitigation program meets the state standard of *best available measure* for sand mitigation by providing approximately 1.5 times the calculated average annual volume of sand that would have been provided by the eroding bank. The top of coastal bank retreat rates that SBPF reports have been proven to be inaccurate and underestimate the volume of material being lost during the numerous NOI hearings that were held before the Nantucket Conservation Commission. SBPF's own calculations have shown the annual average volume of sediment being lost from the Sconset shoreline is significantly greater than the 14.3 cy/lf that has been reported in the ENF. An accurate calculation of the mitigation nourishment is necessary to maintain the sediment supply that naturally erodes from the coastal bank and beach. The geotube revetment is and will continue to prevent the natural erosion of the beach and bank, disrupting the natural supply of sediment to downdrift beaches, which in turn increases erosion on adjacent shorelines and unprotected coastal banks. The Sand Mitigation Program needs to be based on accurate calculations of sediment volumes eroded from bank and beach to even attempt to mitigate for the damage the revetment will cause to the littoral system.

The miscalculation of sediment volumes will permanently damage the coastal bank and beach downdrift of the geotube revetment by starving the adjoining shoreline of sediment. Below are several reported volume contributions that have been calculated in the past by SBPF consults and MCZM:

- Coastal Planning & Engineering, Inc. (SBPF engineering consultant) – Developed a sediment budget for the Sconset shoreline for the period 1995 to 2005 submittal on behalf of SBPF to Nantucket Conservation Commission in November 2006. The sediment budget shows that 24.2 CY/lf/year is eroded from the Sconset shoreline. SBPF has criticized Coastal Planning & Engineering sediment budget stating the sediment budget was not conducted for evaluating revetments, however this is completely unfounded, sediment budgets are simply an accounting of the littoral transport along a shoreline and not dependent on proposals of coastal engineering structures. This effort represents the only significant effort by SBPF to use 'best available measures' to quantify sediment transport along the Sconset Bluff region. The methodology is identical to the type of analysis presented by Epsilon; however, it also is informed by coastal processes data and

numerical modeling. This analysis indicated the bluff/beach system in the project region provides approximately 24.2 CY/lf/year from the sediment budget developed for the period from 1995 to 2005. It should be noted that this sediment budget likely under predicts the current volumes of sediment provided by the coastal bank since a significant portion of the coastal bank along the project area was not eroding over the period the sediment budget evaluated. Thus, annual volumes are expected to be larger than the 24.2 CY/lf/year.

- SBPF's 2012 Notice of Intent for a gabion project (produced by SBPF consultant Epsilon Associates, Inc.) estimated 19.1 to 19.5 CY/lf/year. These values excluded 13% of the total volume eroding from the bank due to the presence of fines within the eroded sediment. The state guidelines make no allowance for discounting the volume of material eroded from a natural littoral system when calculating mitigation volumes. With the inclusion of fines the erosion rate is 20.8 to 22.2 CY/lf/year.
- Ocean and Coastal Consults, Inc. (SBPF engineering consultant) estimated 20.7 CY/lf/year from the September 2010 Siasconset Coastal Bank Stabilization and Beach Preservation Project Alternatives Analysis submittal on behalf of SBPF to Nantucket Conservation Commission.
- Massachusetts Coastal Zone Management calculated volumes between 15 to 26 CY/lf/year (Letter to the Conservation Commission dated August 26, 2013). MCZM shorelines indicate shoreline change rates within the project area are between 4.0 and 9.7 feet per year, which would indicate that the "bluff crest" erosion rate calculated by SBPF of 4.6 feet per year is well below the average for this shoreline and not applicable to utilize as a rate for mitigation calculations. This is further supported by the Ocean and Coastal Consults, Inc. (SBPF engineering consultant) analysis that indicated a shoreline erosion rate of ~8 feet per year or about 20.7 CY/lf/year (from the September 2010 Siasconset Coastal Bank Stabilization and Beach Preservation Project Alternatives Analysis submittal on behalf of SBPF to Nantucket Conservation Commission).

All of the calculated erosion volumes are significantly higher than the 14.3 cy/lf/year that Epsilon Associates, Inc. has calculated. A number of the values are higher than the 22.0 cy/lf/year which is claimed to be approximately 1.5 times the calculated average annual volume of sand that would have been provided by the eroding bank. Most concerning is that the recent erosion rate computed by Epsilon Associates, Inc. supposedly includes the large-scale episodic erosion associated with the 2012-2013 winter storm season (which included both Hurricane Sandy and 'Superstorm' Nemo). Therefore, it is unclear why coastal bluff erosion rates computed by Epsilon have decreased when the analysis is expanded to include the most erosive winter (i.e. 2012-2013) in recent memory.

The range of computed bluff erosion rates above demonstrates the complexity of the littoral system along Siasconset Beach and highlights the need for a conservative approach when determining appropriate mitigation volumes. Even the extensive shoreline monitoring program that SBPF has been funding for the past 20-years to evaluate the erosion of the shoreline and bluff has been unable to provide clear answers to the volumes of material moving within the system due to complex dynamics. Due to the inherent complexities in the system, it is certainly recommended that a conservative mitigation volume (i.e. mitigation volume with an added 'safety factor') be required to offset the adverse environmental impact associated with the project. Unfortunately, it remains unclear what volume would be appropriate, as exposure of the front face of the geotubes prevents sediment supply to downdrift beaches.

While the 20-year monitoring program has provided some quantitative information regarding volume changes at select locations, no conclusions have ever been reached regarding this data set relative to sediment transport directions or magnitudes. Without this information, the proposed monitoring, as planned, cannot determine the causes of erosion on adjacent shorelines. Specific to adverse impacts created by the installation of the 'hard' coastal engineering structure along the Sconset bluff, the proposed monitoring is not designed to assess the near-field or far-field impacts of the structure, but rather to continue collecting data without specifically determining whether the structure is responsible for damage. Without specific 'trigger' conditions that would require mitigation directly on adjacent beaches, the monitoring plan does not tie into nor quantify impacts directly associated with the project.

#### **Wetland Protection Act Compliance**

The project that was proposed and denied by the Conservation Commission does not comply with the Massachusetts Wetlands Protection Regulations. The project consists of a coastal engineering structure extending along the toe of the Coastal Bank from 87-105 Baxter Road. This section of Baxter Road consists of seven lots. The two northernmost lots are vacant. The two southernmost lots are vacant. The only buildings that exist within DEP's jurisdiction in the project footprint are on the three lots in the middle, 93, 95 and 97 Baxter Road. According to the 310 CMR 10.30 (3) vacant lots are not eligible for protection with coastal engineering structures, nor is any form of infrastructure.

*310 CMR 10.30 (3) states 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.*

Further, the applicant has demonstrated that another method of protecting these buildings is feasible. Sand filled terraces constructed of a biodegradable material have been maintained in front of 79 Baxter Road for years. This design of shoreline protection has been discredited by the project proponents because of the maintenance required and because the biodegradable materials do not withstand wave energy as well as geotextile. If, however, the design was implemented with additional nourishment in the volumes proposed to mitigate the geotubes, the system would require much less maintenance and stand up to more severe storms. This design would also be far less likely to have adverse effects on adjacent or nearby coastal beaches.

In the Department's letter to the project proponents, dated December 10, 2013, issuing an Emergency Certification for the construction of the proposed geotubes, essential public infrastructure serving nearby pre-1978 homes was included in the recognition of an emergency for which the Certification was issued.

However, as part of the Notice of Intent review process, and in the Order of Conditions that they issued, the Conservation Commission recognizes that the performance standards of the state regulations do not allow CES' to protect public infrastructure.

We are not aware of any previous permits that have allowed the construction of a CES, similar to the proposed geotubes, for the protection of public infrastructure. If the Department issues such a decision at this location, how many other sensitive coastal banks and coastal dunes will become at risk of coastal armoring for the protection of public infrastructure?

The applicant has not met the burden of proof to demonstrate compliance with 310 CMR 10.30 (3), and therefore has not met the burden of proof to demonstrate compliance with the following:

*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.*

*310 CMR 10.30 (4) that any project on 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.*

The applicant has also 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 proposed project will, without a doubt, result in the narrowing and/or eventual total loss of the coastal beach fronting the structure. The exposure of the geotubes after storms and between nourishment cycles will exacerbate the erosion of the fronting beach as well as end scour impacting the adjacent beach and coastal bank resource areas. The proponents acknowledge this by stating that maintaining the beach is not a specific goal of the project.

The coastal bank fronting Baxter Road provides a significant supply of sediment to coastal beaches, coastal dunes and barrier beaches. The proposed project will eliminate the bank's ability to supply this sediment. The applicants have proposed nourishment as mitigation, however, we remain concerned that the volume, placement and timing of the nourishment is insufficient to mitigate for the elimination of this protected interest of the coastal bank (see *Calculation of Average Annual Volumes of Eroded Material* above).

Furthermore, the Massachusetts Wetlands Protection Regulations do not allow for the protection of vacant lots, any infrastructure or any buildings outside of its jurisdiction (100 feet from a delineated resource area) with coastal engineering structures. Only three of the seven lots proposed for protection can qualify under the Regulations. The project that was proposed and denied by the Nantucket Conservation Commission will result in the destruction of a coastal beach, the elimination of a significant sediment source from the coastal bank fronting Baxter Road, and there are feasible alternatives to the proposed design.

### Conclusion

As stated above, the Nantucket Land Council, Inc with its consultants Applied Coastal Research and Engineering have been active participants in the regulatory process associated with this project. There are not only clear concerns with regulatory compliance, jurisdictional activity, project segmentation, temporary and long-term impacts, and mitigation, but there is also confusion regarding the proposed life of the project. Based on these concerns, we request the MEPA office require the submittal of an Environmental Impact Report so that all appropriate agencies can review all necessary information to determine if this project can be permitted.

Thank you for your time.

Sincerely,



Emily MacKinnon  
Resource Ecologist

Encl: March 14, 2014 letter from NLC to DEP Re: Geotube Construction

CC: Jim Mahala, Mass DEP  
Liz Kouloheras, Mass DEP  
Rebecca Haney, Mass CZM  
Jeff Carlson, Nantucket Conservation Commission  
Rick Atherton, Nantucket Board of Selectmen  
Steven Cohen, Attorney for Siasconset Beach Preservation Fund



## 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

### Board of Directors

Lucy S. Dillon  
*President*  
Paul A. Bennett  
*Vice President*  
William Willet  
*Vice President*  
Howard N. Blitman  
*Treasurer*  
Susan E. Robinson  
*Clark & Assistant Treasurer*  
Karen K. Borchert  
Larry Breakiron  
William S. Breunizer  
Karen K. Clark  
Sara P. Congdon  
William M. Crozier, Jr.  
Phillip B. Day  
Christine Donelan  
Robert Friedman  
Nancy Gillespie  
Wade Greene  
May Heller  
Charles A. Kilvert III  
Laurel Ried Langworthy  
Peter McCausland  
Eileen P. McGrath  
Paul P. Moran  
Carl H. Sjolund  
H. Brooks Smith  
James W. Silberland, Ph.D.  
Peter Watrous  
Jon Wisentaner

### Honorary Directors

John Haffenreffer  
Suzanne Mueller

### Staff

Cormac Collier  
*Executive Director*  
Emily L. MacKinnon  
*Resource Ecologist*  
Linda Sperry  
*Development Director*

March 14, 2014

Liz Kouloheras  
Massachusetts Department of Environmental Protection  
Southeast Region, Lakeville and Cape Cod  
20 Riverside Drive  
Lakeville, MA 02347

Re: Geotube Construction - Baxter Road, Nantucket

Dear Ms. Kouloheras,

We appreciated receiving your email of February 28, 2014 written in response to Emily MacKinnon's request for additional information regarding the appropriate permitting of the Geotube construction in front of Baxter Road, Nantucket.

It appears that we were not clear enough in our original description of the aspects of the Baxter Road Project that went beyond the scope of the Emergency Certification and occurred within Chapter 91 jurisdiction during the construction of the geotube revetment. The plans and technical information that were submitted with the emergency request showed that the geotube revetment structure and mitigation nourishment would be located landward of the MHW line on the beach adjacent to the coastal bank. The geotubes were to be filled with beach compatible material from borrow sources located on Nantucket. Once the material was on site, the sand was to be fluidized with saltwater from the Atlantic Ocean to allow the sediment to be pumped into the geotubes. During discussions with the Nantucket Conservation Commission about the Emergency Geotube Revetment, the applicant's representatives described placing a saltwater intake offshore of the beach on a buoy to provide a continuous water supply for the fluidizing process. However, that procedure was not followed during the construction of the geotubes. For the filling of each geotube, the



contractor under the supervision of the Applicant's representative, excavated a trench in the beach seaward of the geotube revetment. Material excavated from the trench was piled into a berm seaward of the trench to prevent waves from filling the excavation. The end of the trench was excavated through the beach into the Atlantic Ocean to provide a continuous source of saltwater into the basin at all phases of the tide. Due to the volume of water being pumped, it was necessary to maintain a trench to the ocean at all phases of the tide, requiring constant excavation to remove littoral sediments from the trench entrance, as the trench constantly shoaled due to wave action. The fluidizing pump intake had to remain submerged to allow for a continuous supply of saltwater to fill the geotubes with the saltwater/sand slurry. The trench was excavated well below the surface of the ocean (MHW elevation), causing re-establishment of a Mean High Water line into the beach – similar to excavation of a marina into an upland.

Due to the unpermitted construction approach selected by the applicant, use of the pump in this fashion required complete submergence of the pump and a trench to the ocean that could guarantee a water supply during all phases of the tide. Therefore, it is not physically possible that the trench did not require a Chapter 91 permit. Attached to this letter are a series of photographs illustrating the trenching process that was used for the construction of the geotubes. The photographs clearly illustrate the location of the excavation seaward and below the MHW line, as excavation of the trench automatically re-establishes the position of Mean High Water. The contractor was clearly manipulating the location of the MHW line during the construction of the revetment, which according to 310CMR 9.02 is defined as dredging and fill respectively,

*Dredging means the removal of materials including, but not limited to, rocks, bottom sediments, debris, sand, refuse, plant or animal matter, in any excavating, cleaning, deepening, widening or lengthening, either permanently or temporarily, of any flowed tidelands, rivers, streams, ponds or other waters of the Commonwealth. Dredging shall include improvement dredging, maintenance dredging, excavating and backfilling or other dredging and subsequent refilling.*

*Fill means any unconsolidated material that is confined or expected to remain in place in a waterway, except for: material placed by natural processes not caused by the owner or any predecessor in interest; material placed on a beach for beach nourishment purposes; and dredged material placed below the low water mark for purposes of subaqueous disposal.*

It is clear that the Applicant changed construction procedures after the Emergency Certification was issued and failed to notify Massachusetts DEP, USACE, and the Nantucket Conservation Commission about the expanded extents of the project, the impacts associated with the revised construction protocols, and the

permitting requirements that were associated with dredging and fill below the MHW line as a means to fill the geotubes. If the Applicant contends that no part of the construction process manipulated the position of the MHW nor was completed seaward of the MHW line, then they should have provided engineering plans showing the positions and elevations of the excavated trenches certified by either the project engineer or a professional land surveyor who was on site during the filling of the geotubes. Simply stating that the high tide line was staked prior to construction and then respected during the construction processes does not provide convincing evidence to counter the numerous photographs showing the contractor manipulating the position of the MHW line through dredging and filling of the beach.

**We are formally requesting that DEP provide all documentation received from the Applicant or their representatives that prove excavation was not done below the MHW line.** Photographic evidence clearly shows that excavation occurred below MHW, as the pictures show a calm sea with very minor wave runup in all cases and excavation in the water. In addition, it is our understanding that DEP routinely bases enforcement action on similar photographic and observational information. Therefore, it remains unclear how DEP could arrive at their erroneous conclusion regarding the clear violation of state statutes. Further, while we understand the position of DEP regarding temporary construction impacts and subsequent restoration as measures to limit the need for state permits,

*Construction impacts to the beach were temporary in nature and the beach has been restored. Mitigation through beach nourishment is on-going.*

these statements are not relevant nor are they an accurate representation of the laws that govern the dredging and filling of a beach seaward of the MHW line.

It is likely that additional work will be proposed on the coastal beach adjacent to this project in the future. The process by which state agencies determine what constitutes work below MHW, as defined by state statutes, must be transparent and clear. **In addition, we formally request any and all inter-departmental communications and/or communications with others regarding this issue be provided. If the Department has difficulty complying with this request, you can treat this as a Freedom of Information Act Request.**

(Photographs were provided by Dirck and Sharon Van Lieu of Van Lieu Photography. The Van Lieu's documented the construction of the geotube structure on a daily basis, they have taken hundreds of photographs documenting the clear violations of the state statutes regarding Chapter 91 jurisdiction. The entire series of photographs are available for viewing through Van Lieu Photography's website, <http://www.nantucketerosion.com/>.)



Figure 1: A photograph illustrating the use of an excavated trench in the beach seaward of the geotube revetment with material excavated from the trench piled into a berm. The end of the trench has been excavated through the beach into the Atlantic Ocean allowing the fluidize pump to be completely submerged. Note the calm ocean waters and resulting lack of wave setup and runup.



Figure 2: A bulldozer grading the beach after the second geotube was filled. The trench in the beach face is still evident with the inlet to the trench from the Atlantic Ocean. The inlet has almost completely shoaled in due to wave action.



Figure 3: A bulldozer grading the remnants of a fluidizing trench and berm on Seonset Beach, the berm and bulldozer are clearly seaward of the mean high water line.

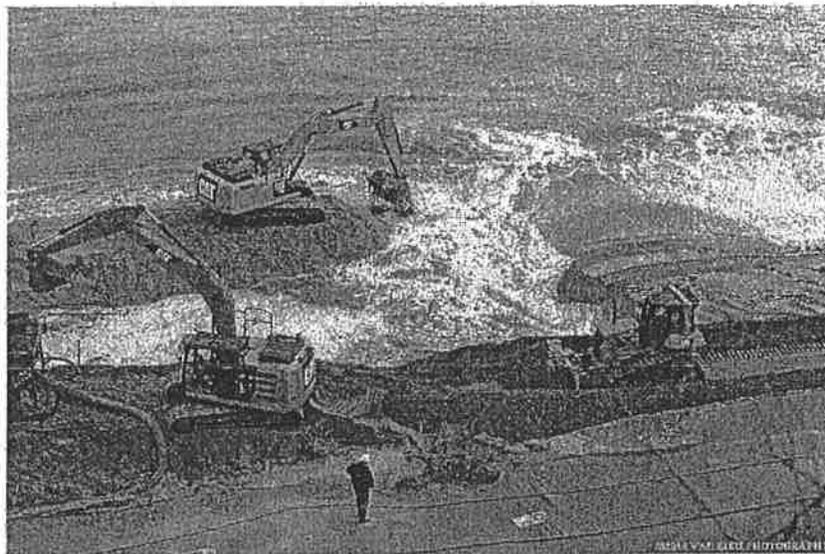


Figure 4: An excavator removing its bucket full of sediment from the Atlantic Ocean. The beach on the right side of the photograph clearly illustrates that the construction activities are occurring seaward of the MHW line. Note the calm ocean waters and resulting lack of wave setup and runup.

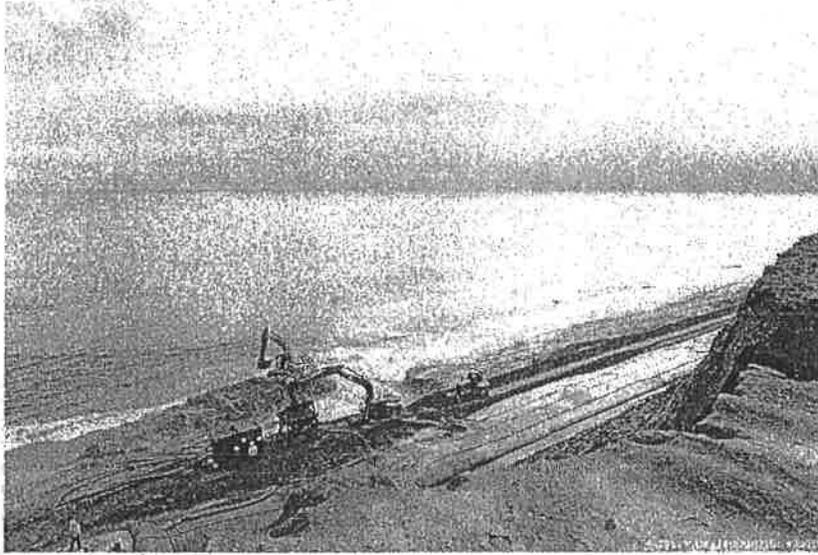


Figure 5: Note the calm ocean waters and resulting lack of wave setup and runup with an excavator sitting on a sand berm constructed seaward of the MHW line while excavating material from the ocean bottom.



Figure 6: An excavator sitting seaward of the MHW line stabilizing the sand berm which is used to protect the trench from which saltwater is continuously drawn at all phases of the tide to fill the geotubes. Note that the pump intake is completely submerged.



Figure 7: An excavator dredging material from below the ocean surface clearly seaward of the MHW line. Note the lack of significant wave uprush within the surf zone.



Figure 8: An excavator dredging material from below the ocean surface at high tide. This illustrates that construction activities were occurring at all phases of the tide and manipulations of the MHW line clearly resulting in dredging and filling seaward of the MHW line.



Figure 9: An excavator adjusting the position of the saltwater intake for the fluidizing pump. Note the size of the intake relative to the individual in the water. The size of the intake requires at a minimum an excavation of 3 to 4 feet below the surface of the ocean to keep the intake submerged under all phases of the tide.

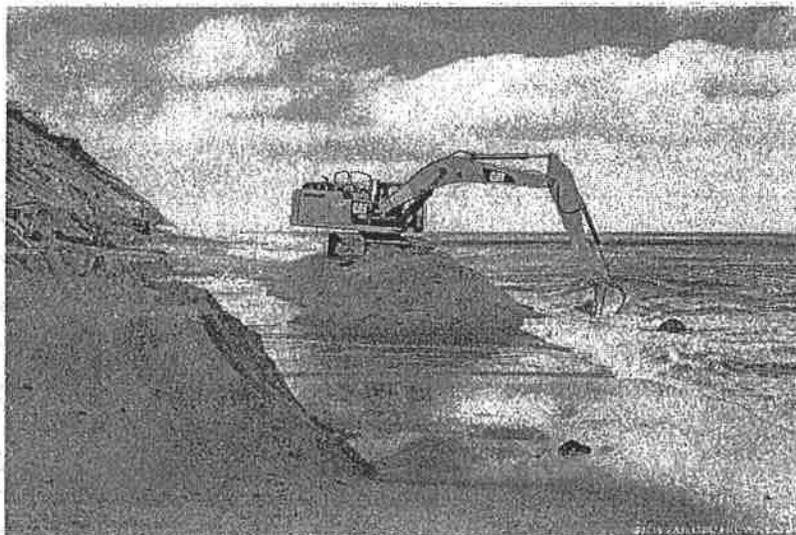


Figure 10: An excavator dredging material from below the ocean surface. Could DEP provide clarification on the position of the MHW in this photograph? Note the calm ocean waters and resulting lack of wave setup and runup.



Figure 11: An excavator dredging material from atop the berm constructed seaward of the trench used to supply saltwater to the fluidize pump. A clear illustration of the contractor operating seaward of the MHW line.

Thank you for your time,

Cormac Collier  
Executive Director

CC: Phil Weinberg, Mass DEP  
Jim Mahala, Mass DEP  
Lealdon Langley, Mass DEP  
Robert Boeri, Mass DEP  
Rebecca Haney, Mass CZM  
Bruce Carlisle, Mass CZM  
Karen Adams, USACE  
Kevin Kotelly, USACE  
Jeff Carlson, Nantucket Conservation Commission  
Rick Atherton, Nantucket Board of Selectmen

**Patel, Purvi (EEA)**

---

**From:** Dirk Roggeveen [d.g.roggeveen@gmail.com]  
**Sent:** Tuesday, September 23, 2014 3:00 PM  
**To:** Patel, Purvi (EEA); james.mahala@state.ma.us  
**Cc:** Jeff Carlson; daniel.wolf@masenate.gov; timothy.madden@mahouse.gov; R G Peterson  
**Subject:** Sconset Beach Preservation Fund MEPA Review, EEA No. 15240  
**Attachments:** citizens letter.pdf

Ms. Purvi Patel:

I have attached a pdf copy of the comments on the pending Sconset Beach Preservation Fund review. These comments are similar but not identical to those previously submitted by the Quidnet Squam Association, but these individual members wished to add their names directly.  
Thank you for your attention to this matter.

Mr. Jim Mahala:

These comments relate to the MEPA review, but overlap somewhat into issues before the DEP on the SBPF Request for a Superseding Order of Conditions.  
As per your comments at the on-site and our conversation about deadlines, QSA as well as residents of the coastline to the north of the project area will be filing additional papers with reference to the Request for a Superseding Order of Conditions.

Thank you both for your attention to this matter.

Dirk Roggeveen

Sent Via Email: purvi.patel@state.ma.us and james.mahala@state.ma.us

September 23, 2014

Secretary Maeve Valley Bartlett  
Executive Office of Energy and Environmental Affairs  
100 Cambridge St., Suite 900 (9th Floor)  
Boston MA, 02114

Mr. James Mahala  
Massachusetts Department of  
Environmental Protection  
20 Riverside Drive  
Lakeville, MA 02347

Attn: MEPA Office: Ms . Purvi Patel, Environmental Analyst

Re: MEPA Project Review  
Project Name: Baxter Road and Sconset Bluff  
EEA Number: 15240  
DEP Superseding Order of Conditions

Dear Secretary Bartlett and Mr. Mahala:

We are writing to you as citizens of Massachusetts concerned with impacts of the above project and to urge MEPA to require a full Environmental Impact Report and to encourage the DEP to uphold the Town of Nantucket's ruling on the project. It is our collective belief that the resources of Nantucket to the north of the above-identified project area will be negatively affected by the already-identified environmental impacts of this project and any failure for the so-called mitigation to compensate for those impacts.

As citizens impacted and effected by this project, we request that MEPA require an Environmental Impact Report for the above referenced project. As explained below, the required EIR must address project segmentation by providing information on the current conditions and anticipated impacts for the full 4257-foot proposed structure that the proponents have submitted to the Nantucket Conservation Commission rather than on this small portion constructed pursuant to a request for a temporary emergency structure. The EIR must address the potential impacts on several state-identified, state-managed, and state-regulated interests in close proximity to the project to the north and south. These include: a significant Piping Plover and Least Tern nesting area on the wide beach lying between the north end of Sconset Bluff and Sesachacha Pond; Sesachacha Pond itself which has just come off the state 303d list and is managed by the Town pursuant to special state legislation allowing for annual controlled breaching of the narrow barrier beach enclosing the pond on the east; the Sconset Wastewater Treatment Plant to the south of Sconset which is operating pursuant to a consent order with DEP which requires relocation of the sewer beds in the event the beach erodes beyond an identified and fixed point; and Great Point Lighthouse, a U.S. Coast Guard aid to navigation located on Great Point to the north. The EIR must also address the thousands of vehicle trips that are required by the project, in this case heavy trucks along both state roads and small local roadways. Finally, the MEPA

process requires review of alternatives and the development of "enforceable mitigation" which we hopes will be addressed through the EIR process, as it has been totally absent to date.

For all the reasons we believe that the project warrants a full EIR, we believe that the project fails to meet the interests protected by the Wetlands Protection Act. Based on the above items and the detailed comments below, we strongly believe that the Department has no choice but to support and echo the decision of the Nantucket Conservation Commission.

Project:

As you are aware, the proposal under review is to make permanent an 852-foot geotextile seawall along the high-energy eastern shorefront beneath a portion of Sconset Bluff, which was permitted by DEP and the Nantucket Conservation Commission as a temporary structure while the project proponents and the Town of Nantucket worked together to relocate Baxter Road and establish alternative access to structures, almost all of which lie outside the 100-foot jurisdictional limit of the Wetland Protection Act.

As constructed and as proposed, the geotextile seawall will have significant impact on the beach and the coastal bank. In fact it is explicitly designed to have a significant impact – as it is proposed to stop the erosion of a coastal headland. The project proponents as well as the DEP and Conservation Commission have attempted to quantify the substantial impact that introducing such a structure will have on the beach in front of the site, as well as to downdrift beaches. Sconset Bluff provides the primary contribution of sand that supplies the beaches, and barrier beach to the north and south. Recognizing this fact, the project proponents have proposed mitigating for such an impact by placing sand below the bluff, on top of, in front of, and, if necessary, immediately adjacent to the seawall. The quantity of sand necessary to compensate for the loss of coastal bank sediment contribution is staggering. DEP required 22 cubic feet per linear foot per year. That amounts to 18,744 cubic feet per year for the 852-ft. structure length. The applicants have submitted information indicating each dump truck carries roughly 20 cubic feet, resulting in approximately 937 dump truck loads. Every year. Forever. Or at least until the project is abandoned.

We are troubled by the likelihood that ,when this so-called mitigation fails to be maintained or fails to perform as represented, the impact in the form of sand nourishment starvation will increase the erosion of downdrift properties. This will impact environmental resources including barrier beach, beaches, dunes, and Sesachacha Pond, and it will impact other coastal property owners by causing direct loss of their property resulting in loss of use and enjoyment of their homes and loss of property values.

We have the following concerns with the current review of this project, and believe that a fully developed Environmental Impact Report must address these concerns before proper consideration can be given by state agencies to the project impacts:

1. As a preliminary matter, we are concerned that the proposed project, as it has arrived at EOEEA has been segmented in a manner to minimize impacts to properties to the north and south, including, as noted below, properties subject to review and oversight by other state and federal agencies. What is presently under review is an 852-linear-foot installation of a geotextile seawall. The project proponents contemplate a much larger structure in the form of a rock revetment, or, if modified in the permitting process, a geotube seawall similar to what has been installed under a temporary emergency permit. The larger project has been talked about and presented to the public in multiple forums on Nantucket. More important, from a regulatory review perspective, is that a Notice of Intent already has been filed for the project with the

Nantucket Conservation Commission. The DEP has assigned the proposal file number SE 048-2581. Sconset Beach Preservation Fund, the same entity as is before you now, has for Conservation Commission review of that filing to be continued, now until some time after MEPA must make its decision on the ENF.

The determination of project area must be greater than the length of the geotube seawall in any event. Part of this project is ongoing deposition of sand mitigation on the geotextile structure, against the bank above the structure, seaward of the structure, and at the immediate ends of the structure. The placement of this sand is proposed as mitigation for the damage that will result from the loss of sediment contribution from the coastal bank. It is proposed that the sand mitigation will enter the ocean in front of the seawall during natural tidal cycles as well as minor and significant storm events, where it will enter the littoral drift and be carried to the north and south. The project proponents assert that sand entering the system in such conditions will deposit on the beaches in a manner no different than the deposition of naturally eroding sand from the coastal bank. The proposed mitigation plan depends on this occurring as so asserted. Given that fact, the entire area of littoral transport and deposition of this sand being placed on the beach should be considered as part of the project area.

2. Rare and Endangered Species Habitat: The coastal headland named Sconset Bluff extends to the north of the project site a short distance where it drops down to an area identified on maps as Hoicks Hollow. A beach club is located there. Just to the north, the coastline is comprised of dunes with a wide beach that extends to Sesachacha Pond, where the dunes disappear and the beach takes the form of a barrier beach enclosing Sesachacha Pond. The beach in this area is ideal habitat for nesting and foraging birds. Specifically, it is the site where a significant population of Piping Plovers and Least Terns have been nesting and foraging annually for years. The property owner undertakes the significant effort to annually have placed and maintained the necessary fencing to keep people and vehicles out of the endangered bird habitat. It is the nature of the beach and the birds that these fences extend right down to the tidal line. Any narrowing of this beach will decrease the habitat area for these birds. Any failure or other unintended consequence of the proposed mitigation will impact this rare and endangered species habitat.
3. The Sconset Wastewater Treatment Plant lies south of the project area, beyond Sconset. It is operated pursuant to a consent agreement with DEP. (This is understood to be Administrative Consent Order, Docket No. 782, September 8, 1989. However, the document is not available online from the DEP website.) By that time, the beach had eroded to the point where it was anticipated that the sewer beds would have to be relocated in order to prevent sewage contamination of the coastal waters. A distance was specified, where, when reached by the tidal line, the Town would be required to abandon the sewer beds. To this date, erosion has not triggered this requirement. But it is generally understood that the sand in front of the sewer beds originates in front of the Sconset Bluff and is transported around the bend in the coastline by littoral drift. Any decrease in such sand contribution likely will result in accelerated erosion seaward of the sewer beds.
4. Great Point is the long spit extending northward from the eastern coastline of Nantucket. It is entirely the result of sand deposition from eroding glacial deposition that makes up the eastern end of Nantucket. It is the site of the U.S. Coast Guard aid to navigation known as Great Point

Lighthouse. The movement of the land making up Great Point has been well documented over the years, and became obvious in 1984 when the original lighthouse fell into the ocean due to coastal erosion and a replacement was built further to the west. The erosion on the east and deposition on the west has not stopped. It can be observed through aerial mapping in possession of state resource offices. Sediment starvation resulting from the armoring of Sconset Bluff would increase the erosion rate to the north of the bluff, and would, over time, impact Great Point. Any failure of the mitigation to compensate for the sand contribution blocked by the proposed geotube seawall and/or stone revetment would accelerate the erosion and would decrease the operational life of this federal aid to navigation.

5. Sesachacha Pond is a roughly 270-acre coastal eutrophic salt pond north of the project site. Its eastern shoreline is a barrier beach separating it from the Atlantic Ocean. The pond attracts 300 recorded bird species, including Northern Harriers and Eastern Towhees. Sesachacha Pond was first placed on the Massachusetts 303d for impaired water bodies in 1998. The Department of Environmental Protection is the governing agency for impaired water bodies, and has included Sesachacha in the DEP Estuaries Project until just recently. The Town of Nantucket conducts a controlled breach once a year pursuant to a special Act of the state legislature. Any permanent breach of this barrier beach would impact the pond, its habitat, and the properties of the residents who border the pond. A failure of the proposed mitigation plan for armoring of Sconset Bluff would cause a significant loss of sediment to the barrier beach that encloses Sesachacha Pond.
6. Vehicular Traffic. The mitigation required under the temporary emergency permit and contemplated by the project proposal under review by DEP requires deposition of significant volumes of sand on and adjacent to the geotextile structure. This sand is transported from an on-island sand pit to the project site by dump trucks. To get to the site, the trucks must pass over Milestone Road, a state road, as well as numerous narrow, small-town roadways. As discussed above, providing the DEP-required mitigation sand alone will require roughly 937 annual dump truck trips to the site. That number is significantly greater if one considers the entire proposed 4257-foot project pending before the Nantucket Conservation Commission. Additional truck trips will be required for any emergency deliveries, to transport the heavy equipment to and from the site, and to transport work crews and supervisors. This activity will be required to continue into the indefinite future, or for as long as the geotube structure remains in place. The trucks ultimately travel to that area of Baxter Road closest to the edge of the eroding coastal bank – the road segment most at danger of being destabilized and collapsing onto the beach below. And they are proposed to do so in several short time periods per year, intensifying their immediate impact.
7. Lastly, but by far not the least, to quote from the EOEEC web site, “MEPA further requires that state agencies ‘use all practicable means and measures to minimize damage to the environment,’ by studying alternatives to the proposed project, and developing enforceable mitigation commitments, which will become conditions for the project if and when they are permitted.” The original emergency permit which was the basis for the follow up Notice of Intent and resulting appeal was based on and required the Town to relocate Baxter Road and establish new access to the homes in the area, most of which are outside the 100-foot coastal wetlands jurisdiction. As issued, it contemplated and required pursuit of an alternative. Relocating the three remaining buildings in the geotube structure project area would constitute yet another alternative. There are others that were proposed and discussed during the Conservation

Commission review process. They need to be addressed at the state level. And no long-term proposal for how the required mitigation will be provided into the future, technically, legally, or financially, has ever been part of the permitting process, a requirement of the MEPA process.

For all of the reasons outline above, we request that the Secretary order a fully developed Environmental Impact Report for this project which should be defined as the pending 4253-foot revetment proposal, unless the proponents agree to permanently withdraw that project or any variation of it. We anticipate that the resource information developed during such a process will provide a better understanding of all the potential negative impacts from this proposal, that it will address the obvious alternatives, and that it will, at a minimum, address the issue of "enforceable mitigation." Once the information requested is gathered, analyzed, and publicly scrutinized it will become even more clear that DEP and the Commonwealth will have no choice but to uphold the informed decision of the Nantucket Conservation Commission.

Sincerely,

Richard Peterson  
43 Squam Road  
Nantucket, MA 02554

Ellen Schloss Flamm  
43 Squam Road  
Nantucket, MA 02554

Peter Kellner  
39 Quidnet Road  
Nantucket, MA 02554

Maria Kellner  
39 Quidnet Road  
Nantucket, MA 02554

Robert Greenhill  
16 Hoicks Hollow Road  
Nantucket, MA 02554

Gayle Greenhill  
16 Hoicks Hollow Road  
Nantucket, MA 02554

Alix Nelson-Frick  
58 Squam Road  
Nantucket, MA 02554

Robert Landmann  
6 Squam Road  
Nantucket, MA 02554

Susan Landmann  
6 Squam Road  
Nantucket, MA 02554

Cynthia Cahill  
44 Squam Road  
Nantucket, MA 02554

Tony Cahill  
44 Squam Road  
Nantucket, MA 02554

Howard Blitman  
54 Squam Road  
Nantucket, MA 02554

Maureen Blitman  
54 Squam Road  
Nantucket, MA 02554

CC: Nantucket Conservation Commission  
Senator Dan Wolf  
Representative Tim Madden  
Quidnet Squam Association

**Patel, Purvi (EEA)**

---

**From:** Tom Quigley [tquigley2@aol.com]  
**Sent:** Friday, August 22, 2014 2:24 PM  
**To:** Patel, Purvi (EEA); Mahala, Jim (DEP)  
**Subject:** Sconset Beach Project, Nantucket

To Whom it may concern:

I am in opposition to this beach project. It appears any obstruction placed before the toe of the bluff will cause down side erosion and upset the balance of the natural beach. The Bluff has been moving ever since I came to this Island 53 years ago. Every attempt to stop erosion elsewhere on the Island in the past has caused massive adjacent damage.

This project is doomed to failure, has extensive long term maintenance issues, and does not have the Capital backing to sustain the project well into the future.

The project should not be allowed, as the Local Nantucket Conservation Commission has determined.

Tom Quigley

**Patel, Purvi (EEA)**

---

**From:** Peter Watrous [watrous1958@yahoo.com]  
**Sent:** Friday, September 05, 2014 9:21 AM  
**To:** Patel, Purvi (EEA)  
**Subject:** Nantucket Con Com

Dear Ms. Patel,

My family has been in Siasconset for over a 100 years. I would like voice my support for the Nantucket Conservation Commission, and would hope that you would respect its judgement. Also, please note that the SBPF does not by any means represent Siasconset at large.

Again, please respect the decisions come to by the Nantucket Conservation Commission about the geotubes that have been place in and on the Siasconset beach.

Thank you,  
Peter Watrous  
917-603-0228

Dear Ms. Patel,

Re: the Nantucket Conservation Commission's Denial of permission to the SBPF in partnership with Town of Nantucket, to build and maintain a wall of geotubes.

Here's why I am urging you to uphold the decision of Nantucket's Conservation Commission.

I sat through many many hours of testimony, over many many months, observing the painstaking, thoughtful manner in which the Commissioners—educated in science, enormously fair and conscientious—heard coastal experts warn against the construction of a seawall under the conditions found in 'Sconset.

The reason those seawalls are outlawed in Massachusetts, as you of course know, holds especially in Sconset: the bluff faces head-on tides, Nor'easters, very strong winds. All the attempts tried by the SBPF to date have been failures, and each was promoted by SBPF with equal zeal. And a total disregard for the science, the reality, involved.

A few property owners, who own homes built up to 1978, most of whom bought those properties at firesale values fully aware that they were buying—at best—a few summers for the equivalent price of summer rentals, have placed their money, their efforts, their wishes ahead of the law and the health of Nantucket Island as a whole.

They hope (and surely this is tilting at windmills!) to “realise hundreds of millions of dollars” (a quote I heard at least four times) in enhanced property values should a wall be allowed, and miraculously, halt the erosion that has been progressing steadily for two centuries.

This imagined gain in wealth (who would buy what has already been lost?) is evoked to explain why the people of Nantucket should trust SBPF to gladly pay the several millions required each year to transport sand to cover the 900 feet of geotubes—sand immediately washed into the sea at the start of storms and thus unavailable throughout the storms remaining days to replenish the beaches downdrift.

These beaches will then be starved of the normally mitigating sediment shed from the Sconset bluff, and fed slowly into the littoral system.

I do not have beachfront property, but I sit daily on my beach, in Squam, throughout the year, and am willing to put up with natural forces that give and take sand from our beach. Why should we allow the SBPF to assume that role? And I do not see why residents should commit to huge annual expenses—which surely will accrue as owners bail out, and as the next generation finds the costs of such folly unsupportable. The Town will have to takeover, by default, as happened in Scituate.

There is an arrogance on the part of SBPF I hope is not encouraged, or other waterfront property owners may sue to to do the same. Thanks for listening!

Alix Nelson-Frick  
58 Squam Road  
Nantucket, MA

## Patel, Purvi (EEA)

---

**From:** Bob Hall [ackrrh@comcast.net]  
**Sent:** Sunday, September 07, 2014 8:52 AM  
**To:** Mahala, Jim (DEP); Patel, Purvi (EEA)  
**Cc:** JCarlson@nantucket-ma.gov  
**Subject:** Please Support the Nantucket Conservation Commission's decision

Dear Mr. Mahala and Mr. Purvi:

Please support the decision of the Nantucket Conservation Commission in their rejection of the proposed Siasconset ("Sconset") Geo-Tube project.

This project and many other projects have been discussed for at least a decade. Over all these years the nearly unanimous conclusion has been that these projects just do not work. Many experts have spoken bringing in the long experience of similar projects completed in other locations, all of which failed or had negative impacts.

Just as people should not build in flood plains, or on barrier islands, those houses should not have been built. Of course, it is easy to say because most were built many decades ago, before the erosion problem was so obvious. Some, however, have been built very recently, despite that knowledge.

In 1976, when I first moved to Nantucket as a biology teacher, I walked along the public path at the top of the Sconset Bluff. The closest house was perhaps 200 yards inland. That is how much land has eroded in the past (almost) 40 years. As a teacher, I discussed the Bluff with the island naturalists. It has rich layers of fossils, and I wanted to take my students there to look for them. I was advised against it, in no uncertain terms, because the bluff was eroding rapidly. It was far too dangerous for students to be climbing about. When I looked for fossils myself, I realized just how steep, and dangerous, it was. I recall one expert, now deceased, stating back then that the bluff was eroding rapidly, and that all those houses would be gone in the not too distant future.

I deeply sympathize with those who own the very expensive properties along the Sconset Bluff\*, but this project will not stop the forces of nature. It will, however, have negative impacts nearby. The Nantucket Conservation Commission has acted in an honest, sincere, and open environment. Please support their decision.

Bob Hall  
Nantucket, MA 02554  
[ackrrh@comcast.net](mailto:ackrrh@comcast.net)

\*As an aside, my parents wanted to buy a small cottage on Sconset Bluff in 1953 when we were "day-trippers" to Nantucket. My mother had read Moby Dick and wanted to visit the island. Back then most people did not want to live on a remote island, but my mother thought a summer cottage by the sea would be fun. My father disagreed. We did not pursue purchasing the \$3000 cottage. When I drive by those beautiful homes on the Bluff, this memory comes back to me; I very well could have been in their position.

## Patel, Purvi (EEA)

---

**From:** Dorothy Vollans [d.vollans@comcast.net]  
**Sent:** Sunday, September 07, 2014 9:33 AM  
**To:** Patel, Purvi (EEA)  
**Subject:** Fwd: Siasconset Bluff and Erosion

RE: Massachusetts Environmental Policy Act

Begin forwarded message:

### **Subject: Siasconset Bluff and Erosion**

Dear Ms. Patel

For nearly 20 years, we who live in this village by the ocean, have put up with attempts by the SBPF to fight natural erosion.

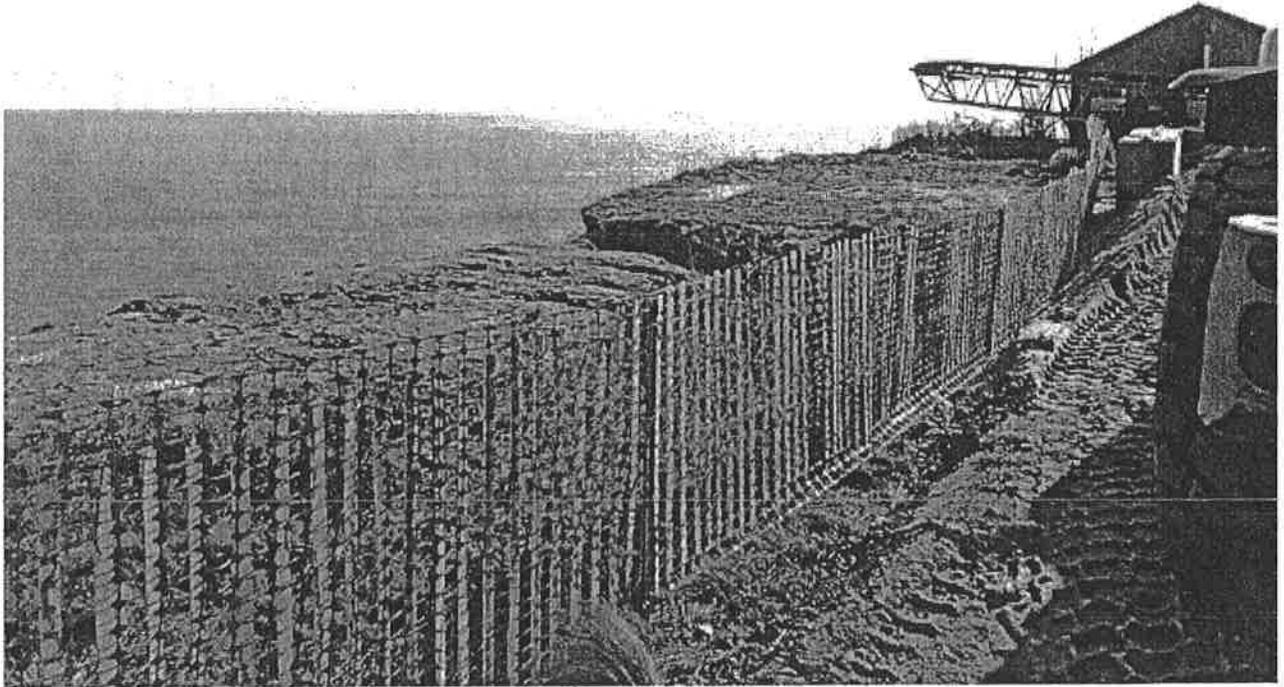
This has taken the form of:

1. various large and ugly structures erected on the beach with pipes and metal parts (mostly washed away) but effects remain.
2. propaganda about how the Post office square area would be gone by 2000 thanks to "a study." (None happened )
3. attempts to raise funds to assist SBPF's multitude of proposed projects - attempts to hard armor the bluff - *all failed*.
4. years and years of wasting hours of the time of volunteer town personnel such as the Conservation Commission and then NOT following their considered decisions.
5. Lately the placing of a sand-filled "geotubes" 500 feet long and then covering them with a 1000 truck loads of sand excavated mid-island and brought out to the geotube area by many truck loads daily in the late winter/early spring months the very year.  
This sand was dumped over the bluff edge onto the beach. It is always washing away so that if it were permitted, trucks would do this *in perpetuity!* The tucks have already damaged some fragile village roads.
6. In spite of this technique to prevent the geotubes from washing away and the unknown amount of erosion at either end of the 500' geotubes, the bluff still also **erodes from above\ (please see photo below)** where ground water is running out and streaming down the bluff to cause more "canyons" for the paths of water runoff.

Attached is another page of photos of what goes on in a formerly well-to-do area of the Sconset Bluff. We think of our beaches as ONE BEACH and none are private nor is there a charge to go to any beach anywhere on Nantucket.

Thank you for your time.

Dorothy Vollans (a year-round resident of Sconset for 35 years).



**Patel, Purvi (EEA)**

---

**From:** Dorothy Vollans [d.vollans@comcast.net]  
**Sent:** Sunday, September 07, 2014 9:35 AM  
**To:** Patel, Purvi (EEA)  
**Subject:** Fwd: Page 2 of Sconset Beach erosion project

Begin forwarded message:

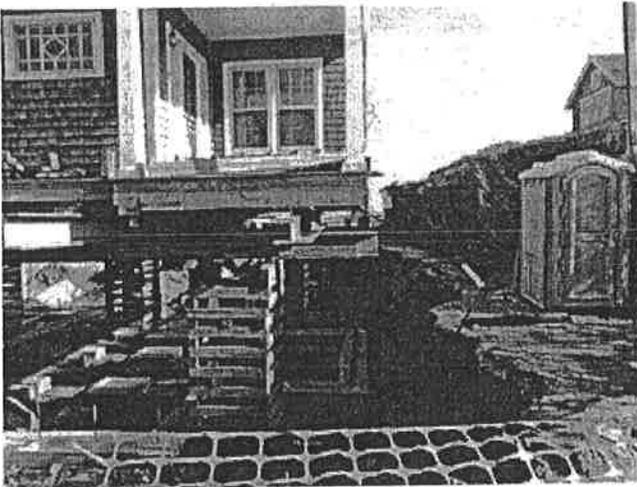
**From:** Dorothy Vollans <d.vollans@comcast.net>  
**Date:** September 7, 2014 9:15:58 AM EDT  
**To:** [Jim.Mahala@State.MA.US](mailto:Jim.Mahala@State.MA.US)  
**Subject:** Page 2 of Sconset Beach erosion project



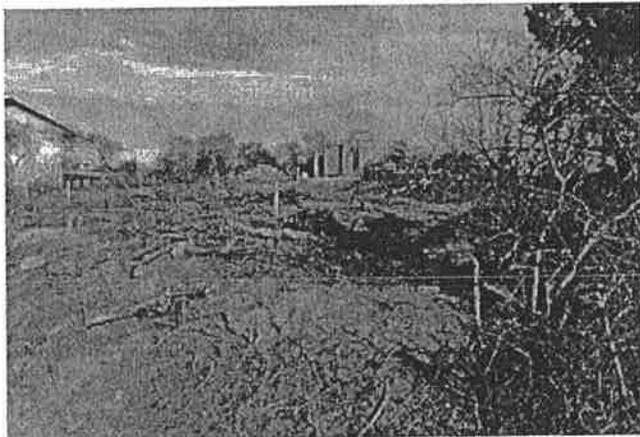
Geotubes delivered up the bluff to be loaded onto trucks and transported down the beach to the test area for prevention of erosion. These will be filled with sand and then covered with lots more sand on the beach.



House being lifted and moved forward and some elsewhere



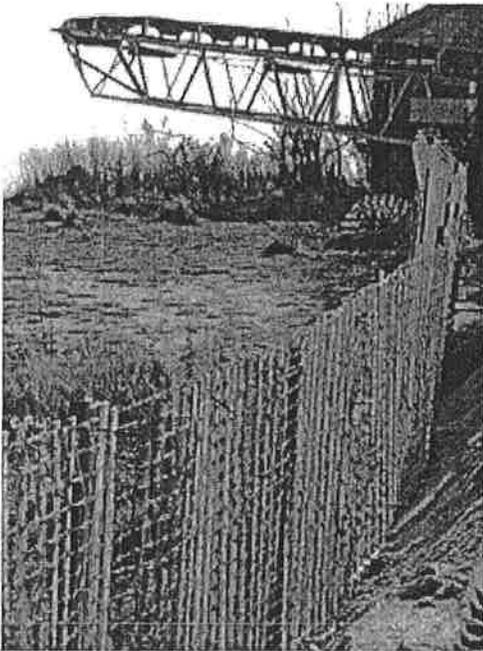
Ocean can be seen just under the house



destroyed lots- house was moved.



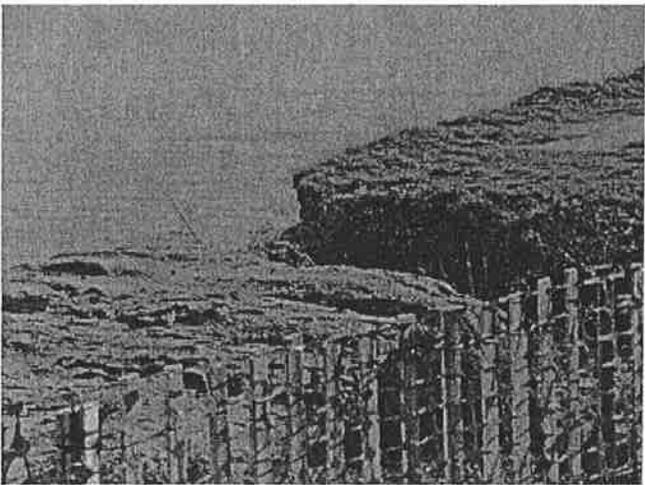
Getting ready to dump sand over the edge into the ocean



DANGER. Stay off.



Erosion at the top of the bluff



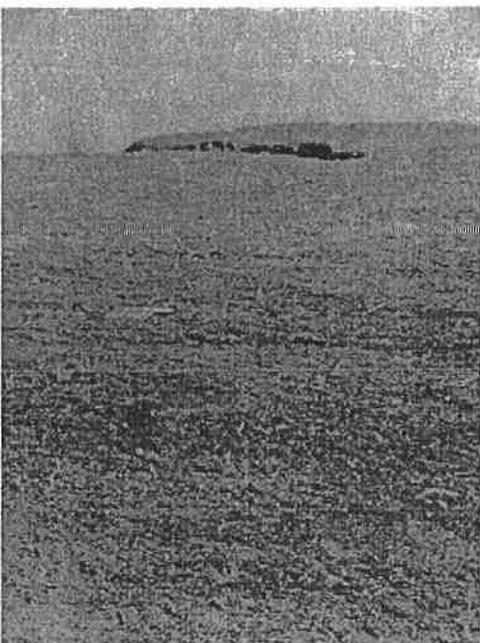
Bad cut at the top



Mother Nature always wins.



Constant activity in the midst of a "fancy" neighborhood.



Sad but happening



and *quite near the road...* will have to move the road at some time in the not-too-distant future.

Dirk Gardiner Roggeveen  
Attorney at Law  
13 Academy Lane  
Nantucket, Massachusetts 02554  
d.g.roggeveen.law@gmail.com  
508-221-0075

PD

Via: FedEx and email: [Purvi.Patel@state.ma.us](mailto:Purvi.Patel@state.ma.us)

September 19, 2014

EMAILED  
SEPT 19, 2014  


RECEIVED

SEP 22 2014

MEPA

Secretary Maeve Valley Bartlett  
Executive Office of Energy and Environmental Affairs  
100 Cambridge St., Suite 900 (9th Floor)  
Boston MA, 02114

Attn: MEPA Office: Ms. Purvi Patel, Environmental Analyst

Re: MEPA Project Review  
Project Name: Baxter Road and Sconset Bluff  
EEA Number: 15240

Dear Secretary Bartlett:

I write on behalf of the Quidnet Squam Association and its members, the residents to the north of the above-identified project area who will be negatively affected by the already-identified environmental impacts of this project and any failure for the so-called mitigation to compensate for those impacts.

Quidnet Squam Association:

The Quidnet Squam Association, Inc. (henceforth "QSA") is an incorporated homeowners association comprised of the residents of the small historic, coastal neighborhoods of Quidnet and Squam, beginning at the barrier beach which creates Sesachacha Pond and the approximately two-and-a-half mile shoreline extending to the north which is comprised of expansive beach and dunes.

Abstract:

QSA requests that your office require an Environmental Impact Report for the above referenced project. As explained below, the required EIR must address project segmentation by providing information on the current conditions and anticipated impacts for the full 4257-foot proposed structure that the proponents have submitted to the Nantucket Conservation Commission rather than on this small portion constructed pursuant to a request for a temporary emergency structure. The EIR must address the potential impacts on several state-identified, state-managed, and state-regulated interests in close proximity to the project to the north and south. These include: a significant Piping Plover and Least Tern nesting area on the wide beach lying between the north end of Sconset Bluff and Sesachacha Pond; Sesachacha Pond itself which has just come off the state 303d list and is managed by the Town pursuant to special state legislation allowing for annual controlled breaching of the narrow barrier beach enclosing the pond on the east; the Sconset Wastewater Treatment Plant to the south of Sconset which is operating pursuant to a consent order with DEP which requires relocation of the sewer beds in the event the beach erodes beyond an identified and fixed point; and Great Point Lighthouse, a U.S. Coast Guard aid to navigation located on Great Point to the north. The EIR must also address the thousands of vehicle trips which are required by the project, in this case heavy trucks along both state roads and small local roadways. Finally, the MEPA process requires review of alternatives and the

development of “enforceable mitigation” which, QSA hopes, will be addressed through the EIR process, as it has been totally absent to date.

Project:

As you are aware, the proposal under review is to make permanent an 852-foot geotextile seawall along the high-energy eastern shorefront beneath a portion of Sconset Bluff, which was permitted by DEP and the Nantucket Conservation Commission as a temporary structure while the project proponents and the Town of Nantucket worked together to relocate Baxter Road and establish alternative access to structures, almost all of which lie outside the 100-foot jurisdictional limit of the Wetland Protection Act.

As constructed and as proposed, the geotextile seawall will have significant impact on the beach and the coastal bank. In fact it is explicitly designed to have a significant impact – as it is proposed to stop the erosion of a coastal headland. The project proponents as well as the DEP and Conservation Commission have attempted to quantify the substantial impact that introducing such a structure will have on the beach in front of the site, as well as to downdrift beaches. Sconset Bluff provides the primary contribution of sand that supplies the beaches, and barrier beach to the north and south. Recognizing this fact, the project proponents have proposed mitigating for such an impact by placing sand below the bluff, on top of, in front of, and, if necessary, immediately adjacent to the seawall. The quantity of sand necessary to compensate for the loss of coastal bank sediment contribution is staggering. DEP required 22 cubic feet per linear foot per year. That amounts to 18,744 cubic feet per year for the 852-ft. structure length. The applicants have submitted information indicating each dump truck carries roughly 20 cubic feet, resulting in approximately 937 dump truck loads. Every year. Forever. Or at least until the project is abandoned.

The concern that my clients have with this so-called mitigation is that in the event it fails to be maintained or fails to perform as represented, the impact in the form of sand nourishment starvation will increase the erosion of downdrift properties. This will impact environmental resources including barrier beach, beaches, dunes, and Sesachacha Pond, and it will impact my clients by causing direct loss of their property resulting in loss of use and enjoyment of their homes and loss of property values.

Need for Fully Developed Environmental Impact Report:

The Quidnet Squam Association members have the following concerns with the current review of this project, and believes that these concerns must be addressed by a fully developed Environmental Impact Report before proper consideration can be given by state agencies to the project impacts.:

1. As a preliminary matter, the QSA is concerned that the proposed project, as it has arrived at EOEEA has been segmented in a manner to minimize impacts to properties to the north and south, including, as noted below, properties subject to review and oversight by other state and federal agencies. What is presently under review is an 852-linear-foot installation of a geotextile seawall. The project proponents contemplate a much larger structure in the form of a rock revetment, or, if modified in the permitting process, a geotube seawall similar to what has been installed under a temporary emergency permit. The larger project has been talked about and presented to the public in multiple forums on Nantucket. More important, from a regulatory review perspective, is that a Notice of Intent already has been filed for the project with the Nantucket Conservation Commission. The DEP has assigned the proposal file number SE 048-2581. Sconset Beach Preservation Fund, the same entity as is before you now, has been asking

for Conservation Commission review of that filing to be continued, now until some time after MEPA must make its decision on the ENF.

The determination of project area must be greater than the length of the geotube seawall in any event. Part of this project is ongoing deposition of sand mitigation on the geotextile structure, against the bank above the structure, seaward of the structure, and at the immediate ends of the structure. The placement of this sand is proposed as mitigation for the damage that will result from the loss of sediment contribution from the coastal bank. It is proposed that the sand mitigation will enter the ocean in front of the seawall during natural tidal cycles as well as minor and significant storm events, where it will enter the littoral drift and be carried to the north and south. The project proponents assert that sand entering the system in such conditions will deposit on the beaches in a manner no different than the deposition of naturally eroding sand from the coastal bank. The proposed mitigation plan depends on this occurring as so asserted. Given that fact, the entire area of littoral transport and deposition of this sand being placed on the beach should be considered as part of the project area. This would be obvious were the mitigation sand a different color (which we are not proposing), green for example: the fact that the project area extended beyond the structure would be apparent based on the mis-colored beaches well to the north and south.

2. **Rare and Endangered Species Habitat:** The coastal headland named Sconset Bluff extends to the north of the project site a short distance where it drops down to an area identified on maps as Hoicks Hollow. A beach club is located there. Just to the north, the coastline is comprised of dunes with a wide beach which extends to Sesachacha Pond, where the dunes disappear and the beach takes the form of a barrier beach enclosing Sesachacha Pond. The beach in this area is ideal habitat for nesting and foraging birds. Specifically, it is the site where a significant population of Piping Plovers and Least Terns have been nesting and foraging annually for years. The property owner undertakes the significant effort to annually have placed and maintained the necessary fencing to keep people and vehicles out of the endangered bird habitat. It is the nature of the beach and the birds that these fences extend right down to the tidal line. Any narrowing of this beach will decrease the habitat area for these birds. Any failure or other unintended consequence of the proposed mitigation will impact this rare and endangered species habitat.
3. The Sconset Wastewater Treatment Plant lies south of the project area, beyond Sconset. It is operated pursuant to a consent agreement with DEP. (This is understood to be Administrative Consent Order, Docket No. 782, September 8, 1989. However, the document is not available online from the DEP website.) By that time, the beach had eroded to the point where it was anticipated that the sewer beds would have to be relocated in order to prevent sewage contamination of the coastal waters. A distance was specified, where, when reached by the tidal line, the Town would be required to abandon the sewer beds. To this date, erosion has not triggered this requirement. But it is generally understood that the sand in front of the sewer beds originates in front of the Sconset Bluff and is transported around the bend in the coast line by littoral drift. Any decrease in such sand contribution likely will result in accelerated erosion seaward of the sewer beds.
4. Great Point is the long spit extending northward from the eastern coastline of Nantucket. It is entirely the result of sand deposition from eroding glacial deposition that makes up the eastern end of Nantucket. It is the site of the U.S. Coast Guard aid to navigation known as Great Point

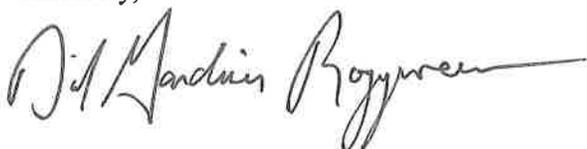
Lighthouse. The movement of the land making up Great Point has been well documented over the years, and became obvious in 1984 when the original lighthouse fell into the ocean due to coastal erosion and a replacement was built further to the west. The erosion on the east and deposition on the west has not stopped. It can be observed through aerial mapping in possession of state resource offices. Sediment starvation resulting from the armoring of Sconset Bluff would increase the erosion rate to the north of the bluff, and would, over time, impact Great Point. Any failure of the mitigation to compensate for the sand contribution blocked by the proposed geotube seawall and/or stone revetment would accelerate the erosion and would decrease the operational life of this federal aid to navigation.

5. Sesachacha Pond is a roughly 270-acre coastal eutrophic salt pond north of the project site. Its eastern shoreline is a barrier beach separating it from the Atlantic Ocean. The pond attracts 300 recorded bird species, including Northern Harriers and Eastern Towhees. Sesachacha Pond was first placed on the Massachusetts 303d for impaired water bodies in 1998. The Department of Environmental Protection is the governing agency for impaired water bodies, and has included Sesachacha in the DEP Estuaries Project until just recently. The Town of Nantucket conducts a controlled breach once a year pursuant to a special Act of the state legislature. Any permanent breach of this barrier beach would impact the pond, its habitat, and the properties of the QSA members who border the pond. A failure of the proposed mitigation plan for armoring of Sconset Bluff would cause a significant loss of sediment to the barrier beach which encloses Sesachacha Pond.
6. Vehicular Traffic. The mitigation required under the temporary emergency permit and contemplated by the project proposal under review by DEP requires deposition of significant volumes of sand on and adjacent to the geotextile structure. This sand is transported from an on-island sand pit to the project site by dump trucks. To get to the site, the trucks must pass over Milestone Road, a state road, as well as numerous narrow, small-town roadways. As discussed above, providing the DEP-required mitigation sand alone will require roughly 937 annual dump truck trips to the sight. That number is significantly greater if one considers the entire proposed 4257-foot project pending before the Nantucket Conservation Commission. Additional truck trips will be required for any emergency deliveries, to transport the heavy equipment to and from the site, and to transport work crews and supervisors. This activity will be required to continue into the indefinite future, or for as long as the geotube structure remains in place. The trucks ultimately travel to that area of Baxter Road closest to the edge of the eroding coastal bank – the road segment most at danger of being destabilized and collapsing onto the beach below. And they are proposed to do so in several short time periods per year, intensifying their immediate impact.
7. Lastly, but by far not the least, to quote from the EOEEC web site, “MEPA further requires that state agencies ‘use all practicable means and measures to minimize damage to the environment,’ by studying alternatives to the proposed project, and developing enforceable mitigation commitments, which will become conditions for the project if and when they are permitted.” The original emergency permit which was the basis for the follow up Notice of Intent and resulting appeal was based on and required the Town to relocate Baxter Road and establish new access to the homes in the area, most of which are outside the 100-foot coastal wetlands jurisdiction. As issued, it contemplated and required pursuit of an alternative. Relocating the three remaining buildings in the geotube structure project area would constitute yet another alternative. There are others that were proposed and discussed during the Conservation

Commission review process. They need to be addressed at the state level. And no long-term proposal for how the required mitigation will be provided into the future, technically, legally, or financially, has ever been part of the permitting process. That too is required by the MEPA process.

For all of the reasons outline above, the Quidnet Squam Association requests that the Secretary order a fully developed Environmental Impact Report for this project. This should be defined as the pending 4253-foot revetment proposal, unless the proponents agree to permanently withdraw that project or any variation of it. The QSA anticipates that the resource information developed during such a process will provide a better understanding of all the potential negative impacts from this proposal, that it will address the obvious alternatives, and that it will, at a minimum, address the issue of "enforceable mitigation." All these elements are necessary for the DEP, at a minimum, to adequately address the pending Request for a Superseding Order of Conditions.

Sincerely,

A handwritten signature in black ink, appearing to read "Dirk Gardiner Roggeveen", with a long horizontal flourish extending to the right.

Dirk Gardiner Roggeveen  
BBO# 54120

## Patel, Purvi (EEA)

---

**From:** SANKATYSAN@aol.com  
**Sent:** Sunday, September 07, 2014 11:20 AM  
**To:** Patel, Purvi (EEA)  
**Subject:** S'conset Bluff Erosion....

Dear Ms .Pate,

After 80 Years of watching our Island become the home of the affluent and " Not in My Back Yard People " I feel a need to speak up.

Our Local Conservation Commission, headed by Jeff Carlson, The Nantucket Coastal Conservancy headed by D.Anne Atherton, and Sarah Oktay Head of the Univ. of Massachusetts Field Station on Nantucket , and Emily Mackinnon of the Nantucket Land Council are experts in their scientific fields up against a few very rich people residing on the S'conset Bluff. These Nantucket are thoroughly educated people in their fields

You are aware of the Scientific issues so no need to insult you with that info or send Photos of the constant and on going forever barrage of trucks hauling sand to the SBPF site ( Sand not similar to Bluff sand anyway ) and tearing up Milestone and S'conset Road daily in perpetuity.

There are other solutions to keep these Bluff People and their homes safe including escape measures proposed by the Town of Nantucket

Just a note to remind you The Bluff management is compared to erosion solutions on The Cape and East Coast and we are THIRTY MILES AT SEA and that is the North Atlantic out there.

Mother Nature Bats Last and I have witnessed 80 years of her Nantucket Home runs,.....bases loaded.....from S'conset Beach to Quidnet.

Thank you for reading ....we old people do ramble.

Apologies for that.

Alexandra Sandra Hubiczsak- Welsh

## Patel, Purvi (EEA)

---

**From:** Catherine Ward [catherinersward@hotmail.com]  
**Sent:** Sunday, September 07, 2014 1:04 PM  
**To:** Patel, Purvi (EEA)  
**Subject:** Nantucket Bluff

Nantucket citizens look to the State to support our local Conservation Commission.

- The Nantucket ConCom reviewed the Notice of Intent for the geotubes over a seven-month period. The hearing was a full and fair one. Our local ConCom is exceptionally well qualified with three members holding doctorate degrees in science.

Hard-armorizing the Sconset bluff with geotubes will result in the narrowing and eventual destruction of the public beach on which the geotubes are installed.

- The beach below the bluff in Sconset is a legacy to the citizens of Nantucket from the Proprietors who took affirmative action in the late 1800s when the lots above on the bluff were laid out by the developer.

Overruling the decision of the ConCom will have severe consequences for Nantucket and our natural beaches because it will set a precedent, not only for Nantucket, but also for coastal communities throughout the Commonwealth.

- Hard armorizing, whether with rocks, wood, steel, concrete (geotubes), destroys beaches.
- Nantucket's Conservation Commission does not permit hard-armorizing, unless there is no alternative.
- Beaches are a key driver of the Nantucket economy. They are the reason many people choose to vacation here, to invest here, to live here.
- Because of the scouring caused by hard-armorizing on properties at either end of the installation, one hard-armorizing installation begets another and another. Once the process begins, it is difficult, if not impossible, to stop.
- SBPF has already stated they intend to extend the hard-armorizing of the bluff from 900 feet to almost 5000 feet, running from Sankaty Lighthouse to mid-Baxter Road.
- If SBPF is permitted to hard-armor, other coastal property owners will attempt to do the same.
- There are reasonable alternatives, soft solutions, that have been installed on the beach below the bluff and have demonstrated their effectiveness.
- Nantucket's ConCom did not find that the adverse impacts of the proposed project could be mitigated. Mitigation is more than just volume of sand. Mitigation is difficult, if not impossible, to calculate because of the unknowns, such as the timing and frequency of storm events.

The decision of the Conservation Commission is entirely consistent with the best practices of coastal management and erosion control recommended by the State through the Office of Coastal Zone Management (CZM).

- Nantucket has recently adopted a Coastal Management Plan for Town-owned property.
- Throughout this process, the work group received technical advice from staff members of CZM and became informed about the best practices of coastal management recommended by the State, including: StormSmart principles of coastal management; NAI (No Adverse Impact); work with Mother Nature, not against her; and do no harm, to cite a few.

- The decision of the ConCom in this matter is consistent with the State guidelines. Any decision by the State to overrule the local Conservation Commission in this matter would be a political one, not an environmental or legal one.

As a tax payer and resident, I should not have to pay the consequences or taxes caused by the actions of a few along the Sconset bluff.

Cathy Ward

4a Silver Street  
Nantucket, Ma 02554  
508-228-5391 Office  
201-951-4782 Cell

**Patel, Purvi (EEA)**

---

**From:** Nannette Orr [nforr@optonline.net]  
**Sent:** Sunday, September 07, 2014 4:12 PM  
**To:** Patel, Purvi (EEA)  
**Cc:** JCarlson@nantucket-ma.gov  
**Subject:** comment / seeking State support for Nantucket ConCom

Dear Ms Patel,

I write to support the decision of the Nantucket Conservation Commission to **not approve** hard armoring of any beaches.

It is known that the ConCom is a board made up of extremely qualified individuals. As a Siasconset, property owner, I agree with their finding that any sort of hard armoring below Baxter road is very, very wrong.

I would like to see the MEPA agree with the Nantucket Conservation Committee's decision that adverse impacts would be caused by any hard armoring. I would also ask that the MEPA agree that there are reasonable \*softer\* alternative means to hold off the erosion for a while. Any sort of hard armoring, not only will require expensive and endless maintenance, but will cause excessive additional erosion at its edges. It is documented that hard armoring does not save beaches, it hastens their loss.

Millenniums of natural erosion has created our beaches, let's not interfere now.

Sincerely,

Nannette Orr  
16 Shell St  
Sconset

## Patel, Purvi (EEA)

---

**From:** Barbara E Bund [bbund@mit.edu]  
**Sent:** Sunday, September 07, 2014 6:37 PM  
**To:** Patel, Purvi (EEA)  
**Cc:** JCarlson@nantucket-ma.gov  
**Subject:** Appeal regarding geotubes on Nantucket

Dear Ms. Patel,

Please support the decision by the Nantucket Conservation Commission not to permit the geotube installation on the eastern coast of Nantucket island.

The deliberations of the Conservation Commission (which I have been able to follow via extensive online summaries and newspaper coverage) have been thorough and fair. The Commission's members appear to have devoted a remarkable amount of time to analyzing the issues; their backgrounds make them highly qualified to reach a sound decision. I urge the State to back the Commission's decision.

First, in terms of the general issue. I attended presentations on Nantucket by visiting experts. One presentation perhaps three summers ago was sponsored by the Sconset group - I believe the group that is now appealing the Conservation Commission's decision. Another this past winter featured Dr. Robert Young. ALL of the experts confirmed that hard-armoring sacrifices the beach.

Allowing the geotubes would destroy the beach and create a very bad precedent for all of Nantucket, leading others to think that they can buy the right to destroy our beaches.

The beaches are there for everyone. They attract tourists. They provide wonderful opportunities for island residents (of whom I am one). In my case, the Sconset shore is a special place to walk and enjoy -- especially with the Nantucket Bird Club, of which I am a member and which often visits the Sconset beach to observe and enjoy the ducks, gulls, shorebirds, gannets etc.

Please do not allow private money to remove our beaches.

Thank you for your consideration,  
Barbara Bund  
12 Equator Drive  
Nantucket

**Patel, Purvi (EEA)**

---

**From:** Michelle Whelan [mwhelan.nantucket@gmail.com]  
**Sent:** Monday, September 08, 2014 6:14 AM  
**To:** Patel, Purvi (EEA)  
**Subject:** In support of the Nantucket Conservation Commission

Dear Ms: Patel:

I am writing in support of the Nantucket Conservation Commission's decision not to allow the Sconset Beach Preservation Funds hard-armorring of our bluff last winter. I support our local Conservation Commission's decision and look to them to help the citizens of Nantucket protect and preserve our natural beaches which will be destroyed by hard-armorring, such as being proposed by SBPF. Nantucket's miles and miles of open, natural beaches are a unique and precious environmental resource: We cannot allow them to become an "endangered species,"

Thank you,  
Michelle Whelan  
13 B Mary Ann Drive  
Nantucket

Sent from my iPhone

**Patel, Purvi (EEA)**

---

**From:** cinda gaynor [cgayma@gmail.com]  
**Sent:** Monday, September 08, 2014 8:28 AM  
**To:** Patel, Purvi (EEA); Jeff Carlson; Mahala, Jim (DEP)  
**Subject:** nantucket/sbpf

I stand with and support our Nantucket Conservation Commission decisions regarding this project. Could go on for a few hours but that is the most essential statement I can make.

Thank you for your considerations on behalf of this fragile island

--  
cinda gaynor  
the gardens  
po box 78  
nantucket, ma 02554  
[508-228-2093](tel:508-228-2093)  
<http://thegardens-nantucket.blogspot.com>  
<http://eatyourgarden-nantucket.blogspot.com>

## Patel, Purvi (EEA)

---

**From:** Thomas Succop [tcsuccop@msn.com]  
**Sent:** Monday, September 08, 2014 9:24 AM  
**To:** Purvi.Patel@state.ma.us; Jim.Mahala@State.MA.US; Jim.Mahala@State.MA.US  
**Cc:** J.Carlson@nantucket-ma.gov  
**Subject:** Siasconset Beach Preservation Fund (SBPF)

Dear Ms. Purvi Patel (MEPA and Mr. Jim Mahala (DEP),

I write as a concerned Nantucket land and house owner of Nantucket, at 83 Squam Road. As owners of "beach" property since October 1994, my wife and I accepted the risk and responsibility of purchasing ocean front real estate.

Leonardo da Vinci once said, "Mother Nature Never Breaks Her Own Laws."

In addition to respecting Mother Nature, and as non-resident tax paying land owners of Nantucket, my family and I support Nantucket's Conservation Commission -- a group of educated responsible individuals representing the citizens of Nantucket. My view is that the NCC should be supported by the Massachusetts agencies of which you two are the leaders.

Hard armoring is a very harsh approach to try to counter the admittedly tenuous ways of Mother Nature -- but it is not a sustainable (physically and financially) approach. I believe that the experts have indicated that hard armoring in particular is folly (not sustainable) for saving beaches.

For at least the aforementioned reasons, I must state that the beach control approach being advocated by the Siasconset Beach Preservation Fund (SBPF) is alarming, not natural (not of nature) and disrespectful of Nantucket's coasts

Finally, the "stealing" from Peter-to-pay-Paul in terms of (1) taking sand from someplace else for "mitigation" and (2) taking State and local tax dollars from all Nantucketers (resident and non-resident) and most probably Massachusetts taxpayers -- that is, taking dollars from someone else to pay for other people's known risks are not sustainable decisions. Such actions are obviously in the category of a "precedent setting" road NOT to go down.

Back to Leonardo: I must point out that he was (is) correct! Mother Nature is what She is: The shore and land masses cannot be successfully hard armored; after 150 +/- years rivers such as the Mississippi cannot be controlled by dikes. etc. etc.

Thank you for your attention and for your consideration to support Nantucket's Conservation Commission's position and conclusion concerning Nantucket's beaches.

Peace. Tom Succop

Sent from my iPad

**Patel, Purvi (EEA)**

---

**From:** Linda Spery [lindaspery@gmail.com]  
**Sent:** Monday, September 08, 2014 3:35 PM  
**To:** Patel, Purvi (EEA); Mahala, Jim (DEP)  
**Cc:** JCarlson@nantucket-ma.gov  
**Subject:** Sconset Beach Preservation Fund Appeal

Dear Ms. Patel and Mr. Mahala,

As a year-round Nantucket resident for the past eight years I have followed with great interest the work of our island's Conservation Commission as they performed their work on behalf of the island's citizens. These Commissioners volunteer for this somewhat thankless task and as such give hundreds of hours of their valuable time outside of their chosen professions away from their families to study, deliberate, review, condition and permit activities within close proximity to inland and coastal wetlands. We are fortunate to have such dedicated public servants who take their responsibilities so seriously and who perform the work day in and day out in a professional manner despite the pressure that is placed on them from all sides of the various issues involved. In a small community such as ours, this is especially difficult and though I do not agree with all positions they take all of the time, I do have respect for their work and the decisions they make.

The Conservation Commission worked tirelessly over seven months studying every aspect of the SBPF geotube Notice of Intent, probing, questioning and processing tons of information before coming up with their decision to deny the project. From my vantage point as an interested citizen attending hearings either in person or on-line and also reviewing newspaper accounts of the hearings, I am steadfast in my support of the Con Com and its decision of denial of the geotube project. Their decision was clearly based on the science and not on political whims or pressure. With three members of the Commission having doctorates in science, I can say with confidence that I believe this to be certain.

For these and other reasons more eloquently presented by those with more in-depth backgrounds in science, I urge you to deny SBPF's appeal of our local Conservation Commission's decision.

Linda Spery  
52 Cato Lane  
Nantucket, MA 02554

**Patel, Purvi (EEA)**

---

**From:** Derek Till [pdtil@mindspring.com]  
**Sent:** Monday, September 08, 2014 5:10 PM  
**To:** Patel, Purvi (EEA)  
**Cc:** JCarlson@nanatucket-ma.gov  
**Subject:** Siconset Beach Preservation Fund (SBPF) vs Nantucket Conservation Commission -- geotube installation.

Ms Purvi Patel, MEPA

Dear Ms Pavel,

This email is in response to the opportunity for public comment on the appeal by the SBPF of the decision by the Nantucket Conservation Commission (Con Com) not to permit the geotube installation constructed under an emergency order.

I feel well qualified to comment, since I have owned beach-front property in Quidnet just north of the Bluff for almost forty years and have been a regular summer visitor for over sixty years. I have followed the efforts of the SBPF since their various projects began many years ago and have regularly received their contractor's reports. I will limit my comments to the possible adverse impact on beaches north of the Bluff.

It is well established that the littoral drift of sand along the beach is south-to-north -- the Quidnet beaches lose sand to the north, but are compensated by sand drift from the south. This "dynamic equilibrium" has been stable for many years, and it is of great concern that the proposed SBPF plans may jeopardize the health of our beaches by impeding the natural drift of sand. Although the Con Com has on several occasions drawn attention to this possible impact on northerly beaches, the SBPF's response has been disappointing.

I would like to draw your attention to Attachment E, Alternatives Analysis, accompanying the Notice of Intent prepared by SBPF's contractor.

In Sec 2.1, Geotextile Tubes, the second paragraph begins:

"Geotextile tubes are not well suited to a high energy environment like Sconset" and after describing the many reasons why, it concludes:

"For these reasons, geotubes are not considered a viable long-term erosion control solution"

These comments by their own contractor seem to be at odds with the SBF's supporting statements and their appeal for a permit for the current installation.

Over the years I have admired the manner in which the Con Com has conducted its affairs. It has stood up to strong political pressure, particularly from the proponents who want to hard armor the Sconset Bluff. I know two of the three PhDs who are on the Commission and I can assure you that they are eminently well qualified in environmental affairs on Nantucket -- we are lucky to have them on the Con Com. The deliberations over the Notice of Intent were well handled and the proponents were given ample opportunities to present their case.

I respectfully urge you to provide the State's valuable backing for the decision by our Con Com not to permit the SBPF's geotube installation.

Respectfully yours

Derek Till  
86, Quidnet Rd

Mail address: 5 Andover Court,  
Bedford MA 01730

Nantucket.

**Patel, Purvi (EEA)**

---

**From:** David Goodman [dgoodman@nantucket.net]  
**Sent:** Monday, September 08, 2014 2:40 PM  
**To:** Patel, Purvi (EEA)  
**Subject:** Nantucket ConCom

I support the decision to stop hard armoring on the beach along Siasconset and anywhere else for that matter. David Goodman, Box 1263, Nantucket, MA 02554

**Patel, Purvi (EEA)**

---

**From:** Charles Walters [carulus38@hotmail.com]  
**Sent:** Monday, September 08, 2014 2:54 PM  
**To:** Patel, Purvi (EEA); Mahala, Jim (DEP)  
**Cc:** JCarlson@nantucket-ma.gov  
**Subject:** Nantucket Conservation Commission decision

Dear Ms. Patel and Mr. Mahala:

I write to urge DEP and MEPA to uphold the Nantucket Conservation Commission's recent decision requiring the Siasconset Beach Preservation Fund to remove the geotubes which they installed at Siasconset Beach. The Commissioners have extensive scientific backgrounds. Their expertise, local knowledge, and experience ensure that they have acted in the best interests of Nantucket and her residents. Their decision is consistent with the Commonwealth of Massachusetts's recommended best practices for coastal management and protection of coastal resources.

Hard-armoring of beaches puts those beaches at high risk of eroding and disappearing because it interrupts the normal movement of sand to and from the ocean. Examples of such disappearances have been recorded at beaches all along the East Coast and the Gulf Coast, as close by as Scituate and as far away as Galveston, Texas. In addition, beaches at and beyond either end of hard-armoring are at higher risk of erosion because of that hard-armoring. Furthermore, a decision to overturn the Commission would set a bad precedent and thus make beach destruction even more likely and widespread.

The situation at the Siasconset Beach is particularly unfortunate because part of that beach is owned by the Town of Nantucket. The Commission is protecting not simply another beach, but one that is public property.

I have been a resident, a property owner, and a voter on Nantucket since 1971. I hope that DEP and MEPA will uphold the Nantucket Conservation Commission.

Sincerely,  
Charles Walters  
50 Orange St.  
Nantucket, MA 02554

## Patel, Purvi (EEA)

---

**From:** Alexandra Harper [AlexWorksTooHard@aol.com]  
**Sent:** Monday, September 08, 2014 7:40 PM  
**To:** Patel, Purvi (EEA); Mahala, Jim (DEP)  
**Subject:** Please help Nantucket's disabled population

Each year Nantucket should become more accessible for disabled people like me, not less accessible. I am writing you to ask you to please help stop wealthy home owners from ruining the public beaches for everyone else by installing hard walls and geotubes against the ocean.

My service dog and I like walking along quiet beaches where we are less likely to happen upon off leash dogs who interfere with my service dog. Because of my disability, I walk slower than most people. It's a problem for me when people build against the sea because if I don't walk fast enough and beat the rise of the tide on my way back, I can get stuck. The things people built to try and foolishly win some impossible battle against rising sea levels and weather, block the beach for people. Once people get stuck on one side of a structure, there's no way around it without having to go into the water, which, for some people, is dangerous.

For good reason, it is against the law to take away the public beach from the public and it's against the law to render a public passage inaccessible by disabled people.

Thank you.

Alexandra Harper and Service Dog "Otto Nantucket"

## Patel, Purvi (EEA)

---

**From:** Rosanna LaBonte [rosannalabonte@comcast.net]  
**Sent:** Tuesday, September 09, 2014 9:10 AM  
**To:** Patel, Purvi (EEA); Mahala, Jim (DEP)  
**Cc:** JCarlson@nantucket-ma.gov  
**Subject:** SBPF appeal of Nantucket Conservation Commission Geotube Denial

I write today in support of the Nantucket Conservation Commission's Denial of Geotube installation on the beach at Siasconset.

At issue here is not an "error of law" when it comes to the interpretation of Massachusetts Statute 310 CMR 10.30(3) with regard to seawalls and pre-1978 construction, but a repeated denial of acceptance by the Siasconset Beach Preservation Fund (SBPF) of the Nantucket Conservation Commission's findings and rulings. The Commission has been anything but arbitrary and capricious over the years spending countless hours considering and allowing the SBPF to install numerous failed projects, including dewatering systems, beach terraces, timbers, dune guard fencing and sand filled jute bags on town owned beach property. Just this summer, when the SBPF was fined for two violations of the Wetlands Protection Act, their president was quoted in the local paper defending their actions by saying, "We didn't think that we had to write it down and submit it and have it approved and make sure DEP gets a copy of it." Quite a surprising response from any organization after 22 years of working with the Nantucket Conservation Commission and the DEP.

I have walked Siasconset Beach from Low Beach to Sankaty for five decades as both a seasonal and a year round resident of the village. I have picked up the debris that litters the beaches. I have ridden out 100 year storms and watched cottages float out to sea from Codfish Park. I don't have to tell you that erosion here is not a surprise. The offshore shoals have shifted since the 1970s and more storm energy reaches the eastern and southern shores of the island and coastal Massachusetts, plain and simple. Each year acres of Massachusetts shoreline disappear due to sea-level rise alone, not including active erosion. Multiple structures have been moved away from the shore in 'Sconset and other areas of the island in my lifetime, as they have for generations before us.

The property owners on Baxter Road have had plenty of time to consider their options and move their dwellings away from the eroding bluff. Lack of planning on their part, does not constitute an emergency on the part of the taxpayers of Nantucket. When you live thirty miles at sea, nothing is certain, there are no guarantees. No matter where you live, no matter who you are, the only laws that really matter are the laws of Nature. Ultimately, no one, not even the SBPF or the state of Massachusetts, can control what the weather does.

Thank you for your attention and your consideration.

Respectfully submitted,

Rosanna LaBonte  
10 Eat Fire Spring Road  
Nantucket, MA 02554

**Patel, Purvi (EEA)**

---

**From:** Susan Cooper Cronyn [sixsigns@comcast.net]  
**Sent:** Tuesday, September 09, 2014 3:12 PM  
**To:** Patel, Purvi (EEA)  
**Subject:** Public Comment

Dear Ms Patel,

I own a beachfront cottage in Quidnet, and my family and I have been visiting the unique island of Nantucket for more than 30 years. My son Jonathan Grant is a principal of the environmental consulting firm Zoco Engineering Inc. I should like to add our family voice to those strongly requesting that the DEP and MEPA should support the Nantucket Conservation Commission's decision not to permit hard-armoring of the beach at Siasconset.

The ConCom's decision was made after a thorough review of the situation by its highly qualified members, and follows the pattern of erosion control practices recommended by the State's Office of Coastal Zone Management. All evidence points to the fact that enabling geotube hard-armoring of the Siasconset beach will not only ultimately destroy that beach, but have adverse effects on other beaches along the Nantucket coast, as well as setting a perilous precedent.

I am proud to live in the Commonwealth of Massachusetts; it has a reputation for farsighted conservation practices, and I have faith that your agency's decision in this matter will add to that.

With respect,

Susan Cooper Cronyn

PO Box 204, Marshfield Hills, MA 02051  
88 Quidnet Road, Nantucket, MA 02554  
email: [sixsigns@comcast.net](mailto:sixsigns@comcast.net)  
website: [thelostland.com](http://thelostland.com)

**Patel, Purvi (EEA)**

---

**From:** Gay Vogt [gayvogt@yahoo.com]  
**Sent:** Tuesday, September 09, 2014 4:05 PM  
**To:** Patel, Purvi (EEA)  
**Cc:** Mahala, Jim (DEP); JCarlson@nantucket-ma.gov  
**Subject:** Siasconset Beach Preservation Fund

Dear Ms. Patel and Mr. Mahala:

I am writing in support of the Nantucket Conservation Commission's decision regarding the SBPF's "emergency" geotube installation. I attended many of the hearings on the SBPF plans and have read many of their submissions to the ConCom as well as submissions of those opposed to hard armoring the shoreline. The SBPF was given many opportunities to add to the record, to submit more information, to have more hearings before the commission. From what I observed, the commissioners were diligent in reading the various and numerous submissions, and listened carefully to the experts and citizens who gave testimony on both sides of the issue.

It is well established that hard armoring eventually causes the beach in front of it to disappear; SBPF can't get around this fact, so they downplay it. They argue that tubes made from jute do not work in spite of a seemingly successful jute installation further down on the same bluff. It is clear from SBPF's literature that their real goal remains the 5000 foot rock revetment they initially proposed before they adopted the emergency permit strategy. This would be a disaster for the beach below and for the beaches at either end of the rock wall. The ConCom rightly decided that it would not be possible to adequately mitigate the adverse impacts of these geotubes, and that a reasonable alternative exists.

If the State overturns the ConCom decision it will have a far reaching and potentially devastating effect. Other property owners will likely want to install hard solutions to protect their real estate and so on and so forth. Hard armoring destroys the beach in front of it, and, like groins, just passes the erosion problem along to the neighbors.

Thank you for your consideration.

Sincerely

Gay Vogt  
1614 Hollywood Drive  
Columbia, SC 29205

30 Sesachacha Rd  
Quidnet  
Nantucket, MA 02554

## Patel, Purvi (EEA)

---

**From:** julie young [julie.young18@verizon.net]  
**Sent:** Wednesday, September 10, 2014 10:51 AM  
**To:** Patel, Purvi (EEA)  
**Subject:** hard armoring sconset bluff

Sept. 8, 2014

Ms. Purvi.Patel, MEPA  
Mr. James Mahala, DEP

Dear Officials

I am writing to urge you to uphold the decision by the Nantucket Conservation Commission to Not allow hard armoring of the Sconset bluff. I was able to attend a Conservation Commission meeting where applicants and their counsel and engineers presented their case for geotubes and armoring. As a member of the general Nantucket public, I was impressed with the fair and unbiased treatment accorded to the applicants. Throughout the meeting the Commission members were asking thorough, intelligent and respectful questions. The applicants were diligent in presenting examples of other projects and details of this proposed project, however when asked for specifics about storm scenarios, the applicants could offer no direct answers. The meeting was simply assured that the worst was unlikely to happen. The project was proposed as a state of the art armoring project, but there was no explanation, for example, of how the rocks constituting the armor would be retrieved if in fact a storm washed them off shore, or possibly to beach property to either side of the bluff. In the face of such an omission of planning, the Conservation Commission simply politely persisted in asking for possible remedies. To no avail. There were no plans.

Another point that was apparent in the meeting I attended was that the applicant did not intend to remain liable for expenses incurred by the town in case of an unprecedented storm that might destroy the armoring or disburse armoring rocks along the shore or along property belonging to beach property owners near Sconset. Potential costs for damages seems unlimited as do legal costs for the town --ultimately all property owners on the island are liable in a worse case storm scenario. The Conservation Commission was not assured that financial liability beyond the cost of building and basic maintenance would be a responsibility of the applicant. At least that was the surprising fact that surfaced at the meeting I attended.

Nantucket is fortunate to have a very well educated and dedicated Conservation Commission. I feel the Commission is acting in the best interests of the town and the environment. All of our coasts are fragile and in need of protection. The bluff in Sconset is only one segment of the entire Nantucket coastline. Perhaps in this time of climate change, protection is needed from those who continue to insist on challenging Mother Nature. Sensible planning is more important than experiments. Please give State support to our local Conservation Commission. They have asked many hard questions and found the answers lacking. They have done their job and should be encouraged to keep doing so.

Sincerely,  
Julie Young  
5 Back St.  
Nantucket, Ma. 02554

**Patel, Purvi (EEA)**

---

**From:** Bill Paulsen [bill@paulsenventures.com]  
**Sent:** Thursday, September 18, 2014 5:57 PM  
**To:** Patel, Purvi (EEA)  
**Subject:** Sconset Bluff

Hi Mr. Patel

I'm writing to support the Nantucket Conservation Commission decision to deny approval of hard armoring the Sconset Bluff. The public hearing process was exhaustive and conducted on truly professional terms. I attended three, totaling 9 hours of presentations, expert testimony and public content. The process worked as intended and I do not believe it should be second guessed. It was fair and thorough and I hope your group supports the process and local determination. I am not reflexively against the proposal but there were no credible asters about down beach erosion. I am deeply empathetic to the homeowner on the bluff, but their case simply wasn't made.

Thanks

Bill Paulsen  
9 Sesachacha Road  
Nantucket, MA 02554  
212.334.2297 mobile  
508.228.3402 home  
[bill@paulsenventures.com](mailto:bill@paulsenventures.com)

**Patel, Purvi (EEA)**

---

**From:** R G Peterson [petersor@att.net]  
**Sent:** Saturday, September 20, 2014 1:37 PM  
**To:** Patel, Purvi (EEA)  
**Subject:** Coming MEPA decision on SBPF Project

Whales End  
43 Squam Road  
Nantucket, MA 02554  
September 20, 2014

Ms. Purvi Patel, MEPA  
[Purvi.Patel@state.ma.us](mailto:Purvi.Patel@state.ma.us)

Dear Ms. Patel,

Representing the Quidnet Squam Association [property owners in these two neighborhoods on the eastern shore] Dirk Roggeveen has submitted to both MEPA and DEP a great deal of technical information about our local environment and the SBPF project in question. Rather than repeating all this, We'd like to add a personal reflection.

My wife's family has owned beach property in Squam (41 and 43 Squam Road) since the early 1970's when she bought Whales End, a somewhat improved fishing shack. Since then we have spent most of every summer—more over the years as the children have grown, married, and created families of their own—on Nantucket. Like most other summer people in this area we maintain legal residences elsewhere (in our case New York), but the most meaningful geographical tie is to Nantucket, where we pay local taxes and consider ourselves "citizens." For us, our part of the Island is the most remote and for that reason the quietest, most beautiful, and best. With over two miles of pristine, sandy beaches on the open ocean, ponds great and small, wetlands throughout, Squam Swamp and Squam Farm, habitats for wildlife in land, water, and air, We think Quidnet-Squam deserves the most careful attention.

Belonging to Nantucket (as we do, wherever else we might vote), we also fortunate in belonging to Massachusetts, a state which takes seriously an obligation to protect the environment and has created an effective system to meet that obligation. Beginning on the local level with the Conservation Commission, there is a process to be followed and time will be required. We trust that on all levels the guiding principle will be "do no harm."

Sincerely,

Ellen Schloss Flamm  
&  
Richard G. Peterson

MARY WAWRO  
3 EAT FIRE SPRING ROAD  
NANTUCKET ISLAND  
MASSACHUSETTS 02554

[marycarita@me.com](mailto:marycarita@me.com)  
508 228 8018 — 213 458 2871(cell)

September 22, 2014

Secretary Maeve Vallely Bartlett  
Executive Office of Energy and Environmental Affairs  
100 Cambridge Street  
Suite 900  
Boston MA, 02114

**Attention:** Ms. Purvi Patel, Environmental Analyst  
[Purvi.patel@state.ma.us](mailto:Purvi.patel@state.ma.us)

**RE: MEPA PROJECT REVIEW  
BAXTER ROAD AND SCONSET BLUFF  
EPA # 15240**

Dear Secretary Bartlett:

This responds to the invitation for public comment issued by Ms. Purvi Patel, MEPA Environmental Analyst at the on-site Joint Meeting conducted by MEPA Project Review and DEP Professional Staff at Nantucket on August 20, 2014. My comments pertain to the plan now being forwarded by the 'Sconset Beach Preservation Fund [SBPF] to construct a permanent 27 foot high seawall along more than 4,000 linear feet at the base of the Sankaty bluff.

My spouse and I have been full time residents of the Island of Nantucket since 2005. We have owned the property at the above address since 1998. Prior to that we were annual vacation visitors to Nantucket since 1984.

From 2007 through 2010, I served as a member of the Nantucket Conservation Commission. I have had the opportunity to observe virtually all the perimeter of this island and to read and study the work of experts in the fields of coastal geology, marine science, and the natural history and evolution of Nantucket Island.

As you are undoubtedly aware, the bluff against which this enormous seawall is proposed to be built is the largest source of sediment in the Commonwealth of Massachusetts and, accordingly, the chief driver of the shape and configuration of this island. This headland has been described as "the bow of a ship" from which sediment flows into the littoral system to enable the island to move, to re-configure itself naturally, and to maintain an

integral bastion against the ravages of the sea for the island and for all of Nantucket's residents.

If this seawall is built, that will all change – no more Great Point, no more Sasachacha Pond, no more Haulover, no more Coatue to the north, no more Cod Fish Park, no more Tom Nevers to the south.

And all of this is to serve the narrow (although obviously financially substantial) private property interests and the ocean views of a few wealthy intermittent seasonal residents on Baxter Road. Eight of the ten existing structures on the eastern side of Baxter Road north of Bayberry Lane, the most threatened section of the bluff, were purchased by their current owners after 2000. Two of the property owners in this area who are principals of SBPF own vacant lots on the other side of Baxter Road. The cost of relocating the houses in this area – as many owners have wisely opted to do – utterly pales in comparison to the financial and other enormously devastating impacts that will surely occur if this project is permitted to be maintained on a long term basis. There is absolutely no justification for the whims of so few to burden the rights of the rest of Nantucket's residents and to utterly destroy the island itself.

The 900-foot long structure now in place under an emergency certification is a camel's nose under the tent. The often and clearly stated objective of SBPF is now and has always been the walling off of the entire bluff. This is a bad thing in and of itself. But even more important, however, is that if a 4000-plus foot seawall is permitted in the most dynamically active stretch of this island's ocean shoreline in response to the influence of the extraordinarily well connected, powerful and enormously wealthy individuals who comprise the SBPF, it will establish a precedent, and there will be no credible ability for governmental agencies to say no to other property owners who wish to construct hard armoring to protect their own buildings at the expense of their neighbors.

We are already facing this issue with other permit applications to the Conservation Commission.

Ultimately — we will have Galveston, Texas — here on our island. Is that what is in the best interest of the environment that your agency is empowered to protect by requiring a full analysis of impacts? I don't think so.

If you are a person who chooses to buy property or to live on property on the edge, the reality is you live on the edge — and you must own the risk of living on the edge. You don't have the right to force your neighbors and your fellow islanders to lose their property and their beaches to pay for the risk you decided to take. And you don't have the right to subject your island community to a so-called "mitigation" protocol that involves the excavation and transportation by truck of hundreds of thousands of cubic yards of sand to Sconset to be annually dumped over the edge of the bluff into the ocean — forever. The purpose of the bluff itself is to perform that function. It must be allowed to do that work. It is simply sensible, economically prudent and environmentally sound to

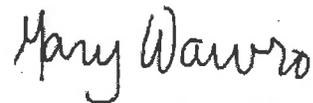
require that buildings and infrastructure be moved out of the way to accommodate the sea, particularly in the face of ongoing sea level rise.

Most of the comments I heard at the August meeting from the "Retreat Won't Save Sconset" contingent were not on point regarding any of the criteria that your agency is bound to consider. I assume, therefore, that they will be addressed by the conclusion that they were not relevant to the analysis of your agency.

Having spent 25 years in a career in public service providing legal services to a municipal agency, I can only trust in the independence of your state agency and hope that the driving force of the decision-making on whether to conduct a full environmental review will be guided by your expert professional staff and will not be dictated by political considerations and forces from the top.

In the face of the facts now before you regarding this matter, it would be unconscionable to fail to require a full EIR for this project. If this project doesn't require a full review, then what possibly would?

Very truly yours,

A handwritten signature in black ink that reads "Mary Wawro". The signature is written in a cursive, slightly slanted style.

Mary Wawro

**Patel, Purvi (EEA)**

---

**From:** VCMERSON@aol.com  
**Sent:** Monday, September 08, 2014 1:58 PM  
**To:** Patel, Purvi (EEA); Mahala, Jim (DEP)  
**Cc:** jcarlson@nantucket-ma.gov  
**Subject:** Public Comments re:SBPF Request for Superceding Order of Condition Hearing

**Dear Ms. Patel & Mr. Mahala,**

**On 8/20/14 @ 87 Baxter Rd., Siasconset, Ma., you viewed the 'Sconset Bluff which I appreciated (nothing like seeing with one's own eyes), & also stated that you would welcome public comments.**

**You have listened to the perspectives of SBPF, the Nantucket Conservation Commission, the citizen's group Nantucket Coastal Conservancy, read comments from Dr. Robert Young, Director of the Program for the Study of Developed Shorelines (the joint venture of Duke & Western Carolina Universities), as well as the general public.**

**Our Nantucket Conservation Commission (with 3 relevant PhD's among them, with "local knowledge", a commitment to a sustainable Nantucket & consultation with our state's Office of Coastal Zone Management), after 7 months of hard work, made a decision with which I concur.**

**The original Baxter Rd. development was planned, in the 1800's, with the provision that people would move their houses "across the street" if bluff erosion threatened their homes.**

**Some of them made a choice, sold that land & are now "between the devil & the deep blue sea".**

**I would prefer to see those homeowners move their structures closer to Baxter Rd. or elsewhere on-island, as many already have.**

**I don't think homeowners on both sides of the altered coastline should incur having their homes threatened by the "scouring" which follows this proposed alteration.**

**Some vocal members of SBPF say they never see anyone walking this threatened beach. Well, it's part of MY daily walk.**

**I want to have faith in our democracy (Howard Zinn said, "Democracy is not what governments do, it's what people do.").**

**Margaret Mead said, "Never doubt that a small group of thoughtful, committed citizens can change the world."**

**My faith has been shattered by "Citizens United", equating \$\$\$ & "free speech" and feel that my desire to "leave my beach alone" might be overwhelmed by the \$\$\$ that SBPF seems willing to spend.**

**Purvi and Jim, please support our Conservation Commission's decisions as following "best practices" and being best for Nantucket.**

**Sincerely,  
Victoria Merson Pickwick  
[vcmerson@aol.com](mailto:vcmerson@aol.com)  
P.O.B. 392  
Siasconset, Ma. 02564  
508-560-0893**

## Patel, Purvi (EEA)

---

**From:** Robert Landmann [hombreterricula@yahoo.com]  
**Sent:** Monday, September 08, 2014 3:17 PM  
**To:** Patel, Purvi (EEA)  
**Subject:** Fw: Sconset Bluff - Nantucket

Dear Messrs. Patel and Mahala

We are writing to you to ask you to help us protect the environment from a needless and irreversible tragedy and support the decision of the Nantucket Conservation Commission. You are familiar with the Sconset Bluff problem in Nantucket and the fact that the Sconset Bluff Protection Fund (SBPF) has installed geotubes to "protect" eight houses from the effects of erosion. It is important that the town of Nantucket should do all it reasonably and fairly can do to protect these homes, but not at the cost of destroying the beaches north and south of the affected area, as well as the public beach where the tubes are installed, and endangering other structures. Moreover, the beach is protected by the state Wetlands Protection Act and Wetlands by-Law.

As you know, the Nantucket Conservation Commission, which has eminently qualified experts serving on it, held hearings on the geotube Notice of Intent and spent seven months reviewing it. It was an open and completely fair process and, tellingly, the SBPF did not once state that the geotubes would protect the beach. To the contrary, it stated that the beach eventually would be destroyed. The same would hold for hard armored revetments which the SBPF also has proposed.

The science and experience are conclusive in that hard armoring does not work. To the contrary, it is destructive. Because of that states like Florida and California, which have the longest coast lines, have outlawed the practice. Not only is the impact on the environment devastating, but the economic toll on Nantucket would be incalculable, as the Island depends on the lure of its beaches to sustain its tourist-based economy.

Despite these problems, the SBPF insists on pursuing the hard armoring option. It is difficult to understand why, as there are environmentally friendly solutions that work. The SBPF insists that adverse effects can be mitigated. The ConCom found the exact opposite to be the case. Moving local sand and bringing in construction sand that is not environmentally appropriate for Nantucket is not a solution but just constitutes a delay in the inevitable destruction of the Sconset beach, as well as those adjacent to it.

Nantucket has a coastal management plan that is consistent with best practices recommended by the state. And the ConCom adhered faithfully to Massachusetts guidelines in developing and administering the plan. Overturning the ConCom's decision would fly in the face of the state's own guidelines and practices and reek of political influence, not what is best for the Island.

Once again, it is unfortunate that there are families who risk losing their houses, as was the case in Cod Fish Park several years ago. One can certainly sympathize with them, just as we did for their neighbors who earlier lost their houses but did not attempt to jeopardize the environmental and economic well being of Nantucket. We trust the MassDEP will examine the facts and impacts impartially and support the ConCom's decision that has been sustained by science and experience.

Thank you for your consideration in this matter.

Susan and Robert Landmann

6 Squam Rd.

Nantucket MA 02554

[Reply](#), [Reply All](#) or [Forward](#) | [More](#)

Robert Landmann <[hombreterricula@yahoo.com](mailto:hombreterricula@yahoo.com)>

Message Body

[ ]

Saved at 2:42 PM

## Patel, Purvi (EEA)

---

**From:** Bruce Mandel [brmandel@aol.com]  
**Sent:** Tuesday, September 09, 2014 3:50 PM  
**To:** Patel, Purvi (EEA); Mahala, Jim (DEP)  
**Cc:** JCarlson@nantucket-ma.gov  
**Subject:** Public Comment in regard to appeal by Sconset Beach Preservation Fund

Ms. Purvi Patel, MEPA  
Mr. Jim Mahala, DEP

I'm Bruce Mandel. I live on Nantucket. I am writing to express my support for the Nantucket Conservation Commission ("ConCom") in regards to the Sconset Beach Preservation Fund's ("SBPF") appeal of our Conservation Commission's decision NOT to permit the geotube installation constructed under a 30-day emergency order last winter. The ConCom found, after seven months of hearings, that the hard-armoring project would have adverse impacts and that there are other reasonable alternatives.

### Summary (details follow below, please)

- Our beaches are an environmental and economic driver of our livelihoods and are a resource that is protected by our local bylaws that deal with Wetlands as well as being protected by the state Wetlands Protection Act.
- The ConCom is comprised of well qualified Nantucket residents whose role is to protect our heritage and environment. They are qualified to make this decision
- The ConCom made a decision based on science, gathered facts, logic and due process.
- There are alternatives to the beach destroying hard armoring
- There is a difference between a right to do something and a privilege to do something.
- The Cautionary Principle applies to the situation

The decision of the ConCom in this matter is entirely consistent with the State guidelines. Should any State entity make neither any decision to overrule our lawfully authorized local Conservation Commission in this matter it would clearly not be a science based neither decision, nor an environmental decision nor would it be, I believe, a legal one that would withstand challenge. It might, however, set an unfortunate precedent that others would point to in expanding hard armored solutions instead of other reasonable and less destructive alternatives. It would be viewed as only being a decision motivated by unspoken influences, not based in science or environmental protection.

### Details

#### Our beaches:

It is important to recognize that Nantucket's miles and miles of open, natural beaches, our entire border, are a unique and precious environmental and economic resource. Our destination resort and tourist based economy is based in our scenic beauty, pleasant seasonal weather and our unspoiled beaches. The bluff along that section of our island is no more privileged than any other portion of our shoreline.

It is important to note that the SBPF has never, throughout the entire hearing process, asserted that the proposed mitigation will protect or preserve our beach. That was not their intent. They are trying to protect the bluff and their property, not the beach. It seems clear to all that they are only interested in protecting their real property. That property was purchased by them with the clear knowledge about the risks involved due to the property's close proximity to a high bluff providing an expansive and desirable natural view. As a matter of record, the SBPF acknowledges that the beach will eventually be destroyed by their hard armoring, dismissing the beach as an insignificant resource, unworthy of being protected and branding it as "the most under-used beach on the island," as if that self serving declaration was sufficient to allow them to destroy it.

Contrary to the apparent disregard by SBPF, the beach below the bluff in Sconset is a legacy to the citizens of Nantucket from the Proprietors who took affirmative action in the late 1800s when the real property above the bluff was divided into buildable lots by a private developer. That beach is worthy of being left to natural means to preserve its very existence.

#### The ConCom is qualified to make this decision

The ConCom members are responsible for making decisions about issues such as this. Our Nantucket Conservation Commission is comprised of knowledgeable, publicly selected citizens all of whom are well qualified. Three members hold doctorate degrees in science.

Nantucket citizens look to the State to support our local Conservation Commission and its legal execution of its responsibilities.

Throughout this process, the work group received technical advice from State level staff members of the Office of Coastal Zone Management ("CZM") and became informed about the best practices of coastal management recommended by the State, including: StormSmart principles of coastal management; NAI (No Adverse Impact); work with Mother Nature, not against her.

The Conservation Commission reviewed the Notice of Intent for the geotubes over an intensive and open seven-month period. Each of the many sessions and hearings was full and fair. They and our Board of Selectman assured that the record is complete. Painstaking efforts were made to assure that documents and efforts support the decision reached by the ConCom.

Nantucket has recently adopted a Coastal Management Plan for Town-owned property.

The ConCom made a decision based on science, gathered facts, logic and due process.

Science, logic and due process all support the ConCom's decision in this matter. The Cautionary Principle applies to the situation – see a bit further below for this important principle and how it applies to this process.

The decision of the Conservation Commission that is being appealed is entirely consistent with the best practices of coastal management and erosion control recommended by the State through the Office of Coastal Zone Management (CZM).

If the State or any outside entity overrides the decision made to protect our beach, will that entity be responsible for correcting the eventual destruction of the beaches or will the people of Nantucket be left to deal with it? Or even worse, will we be forced to live with that destruction? Our ConCom is here to help protect us and our natural resources. They made an informed, legal decision.

We know from science and past experience that hard-armoring the Sconset bluff with geotubes will result in the narrowing and eventual destruction of the public beach on which the geotubes are installed. We have already learned here on Nantucket that hard armoring destroys the beach. The beach disappears. All we need do is look at the hard-armoring on the north shore of our island at Dionis. That hard armored installation is a grandfathered, pre-1978 condition. The beach at that hard armored location is totally gone. It's a real life example of science and nature proving that the wisdom of protecting beaches by the prohibition of such structures is sound policy.

I hasten to call to your attention to the fact that Nantucket's ConCom did not find that the adverse impacts of the proposed project could be mitigated. Mitigation is more than just an incredible and unending volume of sand accompanied by thousands of round trips by heavy equipment and trucks, all of which unnecessarily increase the carbon footprint we struggle to reduce. Mitigation is difficult, if not impossible, to calculate because of the unknowns, such as the timing and frequency of storm events.

Even the proponents of the hard-armoring of a section of the Sconset Bluff concede that, over time, the beach in front of their geotubes will narrow and eventually disappear, just like it did in Dionis. They are now telling us now that when we walk along that beach we must try to "...walk up and over the geotube sea wall..." Not everyone is physically able to climb up and over the geotubes. That amounts to a taking away of our ability to use that beach. And use of the beaches is a right on Nantucket. Using that beach is not a privilege given to us by a few people, it is a right provided by law. For Nantucket, the beaches are our natural border. A privilege can be given and taken away; a right can only be taken away by due process of law. The privilege of temporarily being able to experiment with a geotubes wall is not a right and it was decided to not allow that failed experiment to continue.

Destructive scouring of the bluff and beach has already started due to the SBPF installation. SBPF has already stated they intend to extend the hard-armoring of the bluff from their failed 900 foot experiment to almost 5000 feet, running from Sankaty Lighthouse to mid-Baxter Road.

If SBPF is permitted to hard-armor, the scouring will continue to cause damage to beach property at each end of the hard armored installation. That would likely foster requests from adjacent and nearby property owners for assistance in preserving their property. Once the process begins, it is difficult, if not impossible, to stop. Adjacent coastal property

owners will likely be forced to go to burdensome efforts and unnecessary expense in order to attempt to try to protect their property from the damages inflicted by unnatural causes due to the SBPF's nearby or adjacent unnatural hard armoring.

### There are alternatives

Science and actual experience tells us that hard armoring destroys beaches. For very sound scientifically based reasons, Nantucket's Conservation Commission does not permit hard-armoring, unless there is no alternative. In this case there are reasonable alternatives - soft solutions that have actually been installed and have demonstrated their effectiveness. But SBPF does not like those reasonable alternatives, apparently for self serving reasons, because their objective appears to be to hard armor the bluff.

### A "right" vs. a "privilege"

I believe it is critical to the case at hand that we first clarify the basic difference between a "privilege" and a "right." A privilege is an extra benefit given to a person or a group that meets certain conditions. A privilege can be taken away if conditions are not met or lapse. A "right" is a power to which a person or group has a claim. Like the rights granted by our constitution. Unlike a privilege, a right cannot be taken away from you unless you have violated a law or have otherwise become disenfranchised. In the case at hand, the ConCom has withdrawn the privilege previously and temporarily granted. That is within the ConCom's authority and should not be negated by any other entity provided the ConCom acted legally, which it did.

### The Cautionary Principle applies.

A prudent way for to evaluate the appeal of the Com Com's decision is to consider it in the framework of the Precautionary Principle. That principle states:

"If an action or policy has a suspected risk of causing harm to the public or to the environment, in the absence of scientific consensus that the action or policy is harmful, the burden of proof that it is not harmful falls to those taking the action." In other words, if it may be harmful then the burden of proof does not fall on the ConCom to prove it is not harmful. Instead, the burden of proof falls to the SBPF to prove it is not harmful. They have not proven their proposed actions will not be harmful. The principle implies that there is a social and ethical responsibility to protect the public from exposure to harm when scientific investigation has found plausible risk. There is plausible and real risk to our beaches. These protections can be relaxed only if further conclusive scientific findings emerge that provide sound evidence that no harm will result. No such further scientific findings have emerged. The only things SBPF has come up with are lawyerly implications that there may be some scientific studies that they have come up with that may have conflicting conclusions. Hence, the cautionary principle applies - to do no harm."

As it is generally the case when debate influences a specific group's financial interests and its well-being, the scientific objectivity of those associated with the group can, and should be questioned. Liability, damage claims, real property and large amounts of money can hang in the balance of results from empirical studies. Whether it is a chemical industry blamed for contaminating groundwater with cancer-causing dioxin, the tobacco industry accused of knowingly contributing to lung cancer, team owners of the National Football League (NFL) or the National Hockey League (NHL) subjecting the players to brain damage, or groups of owners trying to protect their real property, it can be extremely difficult to establish the scientific truth when some have an agenda that is to protect their self interests under an obfuscating veil. It is only when sufficient scientific evidence is compiled by those not working for the industry or the group that the issue is considered seriously.

I ask you to consider this important Cautionary Principle of leadership and continue to allow us to protect Nantucket, its residents, taxpayers, and visitors who cherish our island's beaches.

### Conclusion

Overruling the decision of the ConCom will have severe and long lasting adverse consequences for Nantucket and our natural beaches. It would set a precedent, not only for Sconset, but all of Nantucket's beaches as well as for coastal communities throughout the Commonwealth.

I urge you and your colleagues to support the decision of the Nantucket Conservation Commission.

Thank you,

Bruce Mandel  
Nantucket, MA

Dirk Gardiner Roggeveen  
Attorney at Law  
13 Academy Lane  
Nantucket, Massachusetts 02554  
d.g.roggeveen.law@gmail.com  
508-221-0075

Via: FedEx and email: Purvi.Patel@state.ma.us

September 19, 2014

Secretary Maeve Vallely Bartlett  
Executive Office of Energy and Environmental Affairs  
100 Cambridge St., Suite 900 (9th Floor)  
Boston MA, 02114

Attn: MEPA Office: Ms. Purvi Patel, Environmental Analyst

Re: MEPA Project Review  
Project Name: Baxter Road and Sconset Bluff  
EEA Number: 15240

Dear Secretary Bartlett:

I write on behalf of the Quidnet Squam Association and its members, the residents to the north of the above-identified project area who will be negatively affected by the already-identified environmental impacts of this project and any failure for the so-called mitigation to compensate for those impacts.

Quidnet Squam Association:

The Quidnet Squam Association, Inc. (henceforth "QSA") is an incorporated homeowners association comprised of the residents of the small historic, coastal neighborhoods of Quidnet and Squam, beginning at the barrier beach which creates Sesachacha Pond and the approximately two-and-a-half mile shoreline extending to the north which is comprised of expansive beach and dunes.

Abstract:

QSA requests that your office require an Environmental Impact Report for the above referenced project. As explained below, the required EIR must address project segmentation by providing information on the current conditions and anticipated impacts for the full 4257-foot proposed structure that the proponents have submitted to the Nantucket Conservation Commission rather than on this small portion constructed pursuant to a request for a temporary emergency structure. The EIR must address the potential impacts on several state-identified, state-managed, and state-regulated interests in close proximity to the project to the north and south. These include: a significant Piping Plover and Least Tern nesting area on the wide beach lying between the north end of Sconset Bluff and Sesachacha Pond; Sesachacha Pond itself which has just come off the state 303d list and is managed by the Town pursuant to special state legislation allowing for annual controlled breaching of the narrow barrier beach enclosing the pond on the east; the Sconset Wastewater Treatment Plant to the south of Sconset which is operating pursuant to a consent order with DEP which requires relocation of the sewer beds in the event the beach erodes beyond an identified and fixed point; and Great Point Lighthouse, a U.S. Coast Guard aid to navigation located on Great Point to the north. The EIR must also address the thousands of vehicle trips which are required by the project, in this case heavy trucks along both state roads and small local roadways. Finally, the MEPA process requires review of alternatives and the

development of “enforceable mitigation” which, QSA hopes, will be addressed through the EIR process, as it has been totally absent to date.

Project:

As you are aware, the proposal under review is to make permanent an 852-foot geotextile seawall along the high-energy eastern shorefront beneath a portion of Sconset Bluff, which was permitted by DEP and the Nantucket Conservation Commission as a temporary structure while the project proponents and the Town of Nantucket worked together to relocate Baxter Road and establish alternative access to structures, almost all of which lie outside the 100-foot jurisdictional limit of the Wetland Protection Act.

As constructed and as proposed, the geotextile seawall will have significant impact on the beach and the coastal bank. In fact it is explicitly designed to have a significant impact – as it is proposed to stop the erosion of a coastal headland. The project proponents as well as the DEP and Conservation Commission have attempted to quantify the substantial impact that introducing such a structure will have on the beach in front of the site, as well as to downdrift beaches. Sconset Bluff provides the primary contribution of sand that supplies the beaches, and barrier beach to the north and south. Recognizing this fact, the project proponents have proposed mitigating for such an impact by placing sand below the bluff, on top of, in front of, and, if necessary, immediately adjacent to the seawall. The quantity of sand necessary to compensate for the loss of coastal bank sediment contribution is staggering. DEP required 22 cubic feet per linear foot per year. That amounts to 18,744 cubic feet per year for the 852-ft. structure length. The applicants have submitted information indicating each dump truck carries roughly 20 cubic feet, resulting in approximately 937 dump truck loads. Every year. Forever. Or at least until the project is abandoned.

The concern that my clients have with this so-called mitigation is that in the event it fails to be maintained or fails to perform as represented, the impact in the form of sand nourishment starvation will increase the erosion of downdrift properties. This will impact environmental resources including barrier beach, beaches, dunes, and Sesachacha Pond, and it will impact my clients by causing direct loss of their property resulting in loss of use and enjoyment of their homes and loss of property values.

Need for Fully Developed Environmental Impact Report:

The Quidnet Squam Association members have the following concerns with the current review of this project, and believes that these concerns must be addressed by a fully developed Environmental Impact Report before proper consideration can be given by state agencies to the project impacts.:

1. As a preliminary matter, the QSA is concerned that the proposed project, as it has arrived at EOEEA has been segmented in a manner to minimize impacts to properties to the north and south, including, as noted below, properties subject to review and oversight by other state and federal agencies. What is presently under review is an 852-linear-foot installation of a geotextile seawall. The project proponents contemplate a much larger structure in the form of a rock revetment, or, if modified in the permitting process, a geotube seawall similar to what has been installed under a temporary emergency permit. The larger project has been talked about and presented to the public in multiple forums on Nantucket. More important, from a regulatory review perspective, is that a Notice of Intent already has been filed for the project with the Nantucket Conservation Commission. The DEP has assigned the proposal file number SE 048-2581. Sconset Beach Preservation Fund, the same entity as is before you now, has been asking

for Conservation Commission review of that filing to be continued, now until some time after MEPA must make its decision on the ENF.

The determination of project area must be greater than the length of the geotube seawall in any event. Part of this project is ongoing deposition of sand mitigation on the geotextile structure, against the bank above the structure, seaward of the structure, and at the immediate ends of the structure. The placement of this sand is proposed as mitigation for the damage that will result from the loss of sediment contribution from the coastal bank. It is proposed that the sand mitigation will enter the ocean in front of the seawall during natural tidal cycles as well as minor and significant storm events, where it will enter the littoral drift and be carried to the north and south. The project proponents assert that sand entering the system in such conditions will deposit on the beaches in a manner no different than the deposition of naturally eroding sand from the coastal bank. The proposed mitigation plan depends on this occurring as so asserted. Given that fact, the entire area of littoral transport and deposition of this sand being placed on the beach should be considered as part of the project area. This would be obvious were the mitigation sand a different color (which we are not proposing), green for example: the fact that the project area extended beyond the structure would be apparent based on the mis-colored beaches well to the north and south.

2. Rare and Endangered Species Habitat: The coastal headland named Sconset Bluff extends to the north of the project site a short distance where it drops down to an area identified on maps as Hoicks Hollow. A beach club is located there. Just to the north, the coastline is comprised of dunes with a wide beach which extends to Sesachacha Pond, where the dunes disappear and the beach takes the form of a barrier beach enclosing Sesachacha Pond. The beach in this area is ideal habitat for nesting and foraging birds. Specifically, it is the site where a significant population of Piping Plovers and Least Terns have been nesting and foraging annually for years. The property owner undertakes the significant effort to annually have placed and maintained the necessary fencing to keep people and vehicles out of the endangered bird habitat. It is the nature of the beach and the birds that these fences extend right down to the tidal line. Any narrowing of this beach will decrease the habitat area for these birds. Any failure or other unintended consequence of the proposed mitigation will impact this rare and endangered species habitat.
3. The Sconset Wastewater Treatment Plant lies south of the project area, beyond Sconset. It is operated pursuant to a consent agreement with DEP. (This is understood to be Administrative Consent Order, Docket No. 782, September 8, 1989. However, the document is not available online from the DEP website.) By that time, the beach had eroded to the point where it was anticipated that the sewer beds would have to be relocated in order to prevent sewage contamination of the coastal waters. A distance was specified, where, when reached by the tidal line, the Town would be required to abandon the sewer beds. To this date, erosion has not triggered this requirement. But it is generally understood that the sand in front of the sewer beds originates in front of the Sconset Bluff and is transported around the bend in the coast line by littoral drift. Any decrease in such sand contribution likely will result in accelerated erosion seaward of the sewer beds.
4. Great Point is the long spit extending northward from the eastern coastline of Nantucket. It is entirely the result of sand deposition from eroding glacial deposition that makes up the eastern end of Nantucket. It is the site of the U.S. Coast Guard aid to navigation known as Great Point

Lighthouse. The movement of the land making up Great Point has been well documented over the years, and became obvious in 1984 when the original lighthouse fell into the ocean due to coastal erosion and a replacement was built further to the west. The erosion on the east and deposition on the west has not stopped. It can be observed through aerial mapping in possession of state resource offices. Sediment starvation resulting from the armoring of Sconset Bluff would increase the erosion rate to the north of the bluff, and would, over time, impact Great Point. Any failure of the mitigation to compensate for the sand contribution blocked by the proposed geotube seawall and/or stone revetment would accelerate the erosion and would decrease the operational life of this federal aid to navigation.

5. Sesachacha Pond is a roughly 270-acre coastal eutrophic salt pond north of the project site. Its eastern shoreline is a barrier beach separating it from the Atlantic Ocean. The pond attracts 300 recorded bird species, including Northern Harriers and Eastern Towhees. Sesachacha Pond was first placed on the Massachusetts 303d for impaired water bodies in 1998. The Department of Environmental Protection is the governing agency for impaired water bodies, and has included Sesachacha in the DEP Estuaries Project until just recently. The Town of Nantucket conducts a controlled breach once a year pursuant to a special Act of the state legislature. Any permanent breach of this barrier beach would impact the pond, its habitat, and the properties of the QSA members who border the pond. A failure of the proposed mitigation plan for armoring of Sconset Bluff would cause a significant loss of sediment to the barrier beach which encloses Sesachacha Pond.
6. Vehicular Traffic. The mitigation required under the temporary emergency permit and contemplated by the project proposal under review by DEP requires deposition of significant volumes of sand on and adjacent to the geotextile structure. This sand is transported from an on-island sand pit to the project site by dump trucks. To get to the site, the trucks must pass over Milestone Road, a state road, as well as numerous narrow, small-town roadways. As discussed above, providing the DEP-required mitigation sand alone will require roughly 937 annual dump truck trips to the site. That number is significantly greater if one considers the entire proposed 4257-foot project pending before the Nantucket Conservation Commission. Additional truck trips will be required for any emergency deliveries, to transport the heavy equipment to and from the site, and to transport work crews and supervisors. This activity will be required to continue into the indefinite future, or for as long as the geotube structure remains in place. The trucks ultimately travel to that area of Baxter Road closest to the edge of the eroding coastal bank – the road segment most at danger of being destabilized and collapsing onto the beach below. And they are proposed to do so in several short time periods per year, intensifying their immediate impact.
7. Lastly, but by far not the least, to quote from the EOEEC web site, “MEPA further requires that state agencies ‘use all practicable means and measures to minimize damage to the environment,’ by studying alternatives to the proposed project, and developing enforceable mitigation commitments, which will become conditions for the project if and when they are permitted.” The original emergency permit which was the basis for the follow up Notice of Intent and resulting appeal was based on and required the Town to relocate Baxter Road and establish new access to the homes in the area, most of which are outside the 100-foot coastal wetlands jurisdiction. As issued, it contemplated and required pursuit of an alternative. Relocating the three remaining buildings in the geotube structure project area would constitute yet another alternative. There are others that were proposed and discussed during the Conservation

Commission review process. They need to be addressed at the state level. And no long-term proposal for how the required mitigation will be provided into the future, technically, legally, or financially, has ever been part of the permitting process. That too is required by the MEPA process.

For all of the reasons outline above, the Quidnet Squam Association requests that the Secretary order a fully developed Environmental Impact Report for this project. This should be defined as the pending 4253-foot revetment proposal, unless the proponents agree to permanently withdraw that project or any variation of it. The QSA anticipates that the resource information developed during such a process will provide a better understanding of all the potential negative impacts from this proposal, that it will address the obvious alternatives, and that it will, at a minimum, address the issue of "enforceable mitigation." All these elements are necessary for the DEP, at a minimum, to adequately address the pending Request for a Superseding Order of Conditions.

Sincerely,

[Signature on Original]

Dirk Gardiner Roggeveen  
BBO# 54120

August 3, 2014

Dear Amos,

I was disappointed to receive your email on Thursday morning and I was even more disturbed to read your Letter to the Editor in the July 31 Inky Mirror later the same day. It has taken me a few days to respond because I wanted a pause to reflect on my response.

I was invited to the SBPF information meeting on Wednesday as a guest. I listened to Josh Posner's presentation and did not question any of the statements that he presented as "facts", e.g., the thousands of truckloads of sand required annually can be trucked and dumped "exclusively" during the "off-season" (collateral damage to town roads, traffic, pollution etc. in the off-season is apparently not an issue); the vegetation to be planted on the Bluff above the geo-tubes will flourish despite the extreme angle of repose above the tubes; and that when the island sand pits are exhausted there will be a financial incentive to open new pits on the island or dredge sand from the ocean. All of these points and more are open to honest debate.

I made it clear that I was there in my individual capacity as a Quidnet neighbor and not in my capacity as a member of QSA's Board of Directors. I also stated that the ad that ran in last week's Inky was a QSA ad and was not part of a QSA-NCC conspiracy to thwart SBPF's efforts to hard-armor the Bluff. Members of the QSA board who have sat through many hours of ConCom testimony and who have long experience in the advertising industry wrote the ad. Furthermore the ad was vetted by the Board and by counsel prior to publication.

In the course of the meeting, I asked a few questions that I believed were worthy of informed discussion since we, as your neighbors, have legitimate concerns. I pointed out that collectively our members own substantially more ocean and pond frontage than the SBPF members. Accordingly we want to make sure that our properties and Sesachacha Pond are protected from potential adverse consequences arising from the geo-tube project or, even worse, SBPF's efforts to revisit the building of a rock revetment.

In particular we are concerned about the need for perpetual and timely mitigation. Josh was unable or unwilling to put a dollar figure on what this will cost each and every year into the future and what form of legally binding financial *guarantees* will be provided in the event hard-armor is permitted. Many of your members are very astute financially and I am sure that they could provide guidance to your experts in explaining how to calculate a discounted cash flow.

As you know, the existing escrow fund is designated for the *removal* of the geo-tubes should SBPF be ordered to do so. Furthermore when questioned about the

dollar impact on the Betterment District millions but will not acknowledge, mitigate beaches to the north and this is very costly.

Another question homeowners all or consents to easement Town which is necessary for any other portion of the Project. There was further explanation that you could not walk on top of the geo-tubes at high tide if a walk on the beach in front of the

But to cut to the chase to attack the QSA of *misinformation*, issues when I was

I tried to address property owners. Are QSA protection of our property "hundreds of millions" starting at Hicks Hollow Road and running all the way to Wauwinet pay taxes and use

Incidentally, it would be interesting to learn when the last time was that each of your members actually used the beach to walk, swim and/or fish. Moreover I would be interested in learning how many of your members actually set foot on the beach on a *frequent* basis. I got the impression at the meeting that many of the attendees had not actually walked the beach since the geo-tubes were installed (although this may be an incorrect impression).

Now with regard to what you regard as "misinformation". Yes, as SBPF's highly paid lawyers for state law says properly permitted (emphasis mine) seawalls are legal to protect pre-1978 buildings. I agree. But your lawyers continually ignore the fact that they are *not* permitted for other purposes, such as protecting empty lots or roadways. The DEP issued a temporary emergency permit to protect Baxter Road while it was being relocated, which was the representation to the Town. As you know, that was the immediate and primary concern of the BOS was to save Baxter Road until other access could be provided to the Baxter Road houses. The Town Com subsequently determined that there were reasonable

SBPF's members in terms of increased taxes from the proposed project. All that I heard was that perpetual mitigation will "...cost \$300 million of properties" on the Bluff. As your experts state, mitigation will be needed in perpetuity in order to protect down-drift to the north and south from potential adverse effects from the geo-tubes.

that went unanswered: has SBPF obtained from SBPF's the necessary "...release and indemnification agreements.... consents and waivers of damages in the case of any taking by the necessary for the relocation and/or reconstruction of Baxter Road, portion of the Project, and consents to betterment assessments..."? There was further silence regarding beach access (although to be fair Josh did mention that you could not walk on top of the geo-tubes at high tide if a walk on the beach in front of the geo-tubes is difficult or impossible).

In light of your email and letter, if you and your colleagues wanted to speak in an intemperate manner, accusing the QSA and its advisors of *misinformation*, you must respectfully differ and ask why did you not raise your concerns when I was present at the meeting?

Why do some of the concerns that our members have as property owners not allowed to express concerns about the protection of their properties? Is it the case that *only* SBPF's property owners have "hundreds of millions" worth of property to protect, not our members who own property along Hicks Hollow Road and running all the way to Wauwinet? We also use our beaches on a daily basis to swim, walk and/or fish.

It would be interesting to learn when the last time was that each of your members actually used the beach to walk, swim and/or fish. Moreover I would be interested in learning how many of your members actually set foot on the beach on a *frequent* basis. I got the impression at the meeting that many of the attendees had not actually walked the beach since the geo-tubes were installed (although this may be an incorrect impression).

Now with regard to what you regard as "misinformation". Yes, as SBPF's highly paid lawyers for state law says properly permitted (emphasis mine) seawalls are legal to protect pre-1978 buildings. I agree. But your lawyers continually ignore the fact that they are *not* permitted for other purposes, such as protecting empty lots or roadways. The DEP issued a temporary emergency permit to protect Baxter Road while it was being relocated, which was the representation to the Town. As you know, that was the immediate and primary concern of the BOS was to save Baxter Road until other access could be provided to the Baxter Road houses. The Town Com subsequently determined that there were reasonable

alternatives to keeping the *temporary emergency* geo-tubes in place permanently. This is what the debate is all about.

You state that there are "hundreds of *properly permitted* seawalls (*italics mine*) in Massachusetts and new ones are added every year". It should be pointed out that many of these seawalls pre-date the existing law. Also I have not seen evidence of seawalls being constructed in Massachusetts that are of a scale similar to your proposal. Also I find the implication that Nantucket's jetties are analogues to the geo-tubes as rather disingenuous.

Apparently SBPF thinks that the ConCom is incapable of making an independent decision after listening to dozens of hours of testimony and reviewing hundreds of pages of filings in their determination that the geo-tubes should be removed. ConCom members are appointed by the BOS and it insults their integrity to challenge their abilities as was implicit in Josh Posner's remarks at the meeting.

You question QSA's choice of advisors and their veracity. In contrast to the highly paid teams of lawyers, consultants and engineers SBPF has retained to present SBPF's case, QSA is a neighborhood association. To date we have engaged one lawyer, Dirk Roggeveen, (a respected local lawyer and former ConCom administrator) to attend the hearings on our behalf and to raise legal issues as appropriate based on his knowledge and opinion of the law and in particular, environmental regulatory law. In addition, QSA asked Jim O'Connell, an expert on coastal processes, to present his views to the ConCom.

To disparage Mr. Roggeveen's legal opinions or the views of *other* experts in coastal processes (i.e., experts not hired by SBPF) is entirely inappropriate. I guess this means that *only* SBPF's lawyers and hired guns are correct and that any experts who have a differing opinion are not to be heard. This is not the way the system is supposed to work.

And what about SBPF's "information", e.g., the Bluff was hit with "...98 mph wind" during recent storms. Unfortunately sustained winds during Hurricane Arthur were only 47 mph, and gusts only reached 63 mph, a bit short of 98 mph. Jute bags don't work? Other experts would say that they worked as designed. They offered temporary protection, and yes they have to be refilled after storms because the sand is sacrificial by design and this is expensive, but so is mitigation. Also jute bags are bio-degradable (whereas geo-tubes apparently are not) and I seen no hard evidence that jute-bags -a "soft solution" - cause serious harm to the fishery.

Perhaps the most disturbing aspect of the meeting and your letter was the tacit acknowledgement that, in essence, SBPF believes hard armoring is the *only* way to go and that if the current project is approved the plan is to extend the hard

armoring to a total of 4,000 feet. My question regarding the impact of end scouring impacting the bluff in front of the lighthouse was also met with near silence, but it seems apparent that SBPF feels that hard-armoring is the wave of the future (a beggar thy neighbor policy, especially for those homeowners who cannot afford to hard-armor their own property).

I doubt that Islanders, if put to a vote, will agree to provide Town taxpayer support for the current or expanded project, although they would probably vote in favor of a Betterment District. In any event, if SBPF is allowed to proceed with hard-armoring it is essential that legally binding, fully financed guarantees are in place to protect down-drift properties to the north and south from potential adverse consequences.

Amos, as you well know, I have been a strong and long-term supporter of many of the Nantucket's conservation efforts (NCF, Sconset Trust etc.) I am also extremely concerned about climate change. But to imply that other Islanders don't care what happens to Sconset Bluff and that they think that the only solution erosion is to do nothing is incorrect. It just happens that other Islanders favor exploring soft-solutions because we do not want to foresee a future Nantucket surrounded by seawalls. I realize that SBPF and its experts do not believe that softer options are viable, but *other* experts take the opposite view.

As a reminder, SBPF has proposed other projects to protect the Bluff. Each of the previous proposals was, at the time, deemed by SBPF's experts to be state of the art and best practice. They have either not been permitted or failed. For example, has everyone forgotten the "success" of SBPF's highly touted dewatering project?

Lastly I think that you are insulting not only QSA and its members, but also the ConCom and the BOS by stating that "we are attempting to influence our elected officials using information that QSA "... knows to be false". This is verging on defamation. Josh's letters to the editor (which seem to be published with great frequency in the Inky Mirror) and your ads are not attempting to influence Islanders? Are our elected and appointed officials, who have access to hours of testimony from environmental experts, lawyers, and engineers, really incapable of making up their own mind as to the "facts"?

Staying within the bounds of truthfulness is something I believe strongly in. But just because certain opinions of independent experts disagree with the opinion of SBPF's experts means that QSA is "...using information that [they] know to be false"? This is beyond the bounds of a fair and reasoned dialogue.

Worthy of note is the fact that Josh did not respond to one of your member's questions as to why the ConCom ordered the removal of the geo-tubes. And apparently SBPF thinks that the DEP is highly likely to overturn ConCom (appointed by Nantucket's elected officials), but Josh did not explain why the

Town is not joining SBPF in the appeal to the DEP. Perhaps your members need to start asking some more probing questions.

In closing, I am saddened that you have decided to attack the QSA and its advisors. We are your neighbors and we love Nantucket just as much as you do. To think otherwise is to do us a disservice. I would sincerely hope that you would consider sending a letter of retraction to the Inky Mirror and an apology to the QSA membership. Your letter certainly does not advance your expressed desire of "working together" to address the issues.

Yours,

Peter L. Kellner

39 Quidnet Road  
Nantucket, MA 02554

(As sent by email attachment on August 3, 2014)

Massachusetts Environmental Policy Act Office (MEPA)

REQUEST FOR SUPERSEDING ORDER OF CONDITION

Applicant: Siasconset Beach Preservation Fund, Inc. (SBPF)

Property Location: Sconset Bluff, 91 to 105 Baxter Road

Date: September 22, 2014

Attention: Ms. Purvi Patel (MEPA)

---

PUBLIC COMMENT

I am a year-round resident of Nantucket. I have attended virtually all of the Conservation Commission (ConCom) meetings regarding this matter, as well for the Emergency Certification and the concurrent Notice of Intent (NOI) for a rock revetment proposed by the same applicant.

While I understand the record before you is voluminous, I would like to bring to your attention the following four items:

1. **Submission of a letter by Dr. Robert Young re hard-armoring** that was originally provided as written testimony to the Conservation Commission during the NOI hearing for the rock revetment, which, while continued, is still open;
2. **Contradictory information about geotubes that has been submitted by the same applicant (SBPF)** in the alternative-analysis section of the proposals in two concurrent Notices of Intent before the same regulatory body (the Nantucket Conservation Commission) that raise serious questions about the credibility of the analyses;
3. **New information as to why relocation is now a viable alternative;** and
4. **The fact that the decision of the Conservation Commission in this matter is consistent with the best practices advocated by the Commonwealth of Massachusetts through its Office of Coastal Zone Management (CZM).**

## FURTHER DETAIL

**1. Submission of Comment Letter by Dr. Robert Young dated August 8, 2013, into the record of these proceedings.**

Dr. Robert Young, Director of the Program for the Study of Developed Shorelines, a joint venture of Duke and Western Carolina Universities, and author with Dr. Orrin Pilkey of "The Rising Sea," has submitted a comment letter to the ConCom in the proceedings relative to the NOI to install a four-tier geotube sea wall at the base of the bluff. I understand that, as his letter, dated November 5, 2013, is part of that record, it has been submitted to DEP in the current matter.

Previously, Dr. Young had submitted a comment letter in a concurrent Notice of Intent, an application to install a rock revetment at the base of the bluff. As coastal engineering installations made of rocks or geotubes are considered hard structures, the points made by Dr. Young in this letter, dated August 8, 2013, are as germane to geotubes as they are to rocks. Therefore, I respectfully request that the August 8 letter by Dr. Young be submitted into the record of these proceedings. [See Attachment I.]

It should be noted that in his August 8 communication, Dr. Young says this about emergency installations:

**Many very bad coastal engineering projects have been permitted during emergency orders, general orders, or in other such situations. I recently watched the construction of the largest rock revetment ever constructed to protect one home. The structure was built with almost no review on Long Island following Hurricane Sandy. Local Town Trustees opposed it, but were powerless to stop it. The structure would never have been permitted by New York DEC during the standard permitting process. I urge you to take your time in reviewing this request. If this is an emergency, then almost every other shoreline in the US is experiencing emergency conditions.**<sup>1</sup> [Emphasis added.]

Fortunately, in this instance, the members of our Conservation Commission conducted a full and fair, seven-month regular permitting process of the as-built emergency installation. The process culminated on June 3 with a 4-to-2 vote to deny permitting the coastal engineering structure.

---

<sup>1</sup> Young Comment Letter to the Nantucket Conservation Commission, August 8, 2013, pp. 8 and 9.

**2. Alternative Analyses: Contradictory information about geotubes contained in concurrent Notices of Intent submitted by the same applicant raises serious questions about the credibility of the analyses.**

As DEP and MEPA must be aware, the proponent, SBPF, had, at one point, two (2) open Notices of Intent (NOI) before the ConCom at the same time: one for a rock revetment, the other for a geotube revetment, both to be located in the same location on the beach below the bluff in Sconset.

In the NOI for the rock revetment, the analysis of alternatives includes geotubes. The analysis begins with this declaratory statement, **“Geotextile tubes are not well-suited to a high energy environment like Sconset.”** After listing a number of reasons why geotubes are unsuitable in this location, it concludes: **“For these reasons, geotubes are not considered a viable long-term erosion control solution.”** [Emphases added.]

In the NOI for the geotube revetment, the analysis of alternatives also includes geotubes, obviously, as the application is for geotubes. After several statements about geotubes, this section concludes: **“For these reason this alternative [geotubes] is deemed a viable option for the short-term.”** [Emphasis added.]

Such contradictory information submitted by the same applicant in concurrent Notices of Intent before the same Conservation Commission **raises serious questions about the credibility of the analyses.** It appears that, rather than engage in a factual analysis of alternatives, the applicant submitted information intended to justify the preferred outcome: in one case, rocks, in the other, geotubes.

[See Attachment II for a side-by-side comparison of the relevant sections of the Alternative Analyses contained in the two Notices of Intent.]

**3. Alternative Analyses: Relocation now a viable option.**

Over a year has passed since SBPF and the Town of Nantucket entered into a Memorandum of Understanding (MOU) in July of 2013, declaring that an emergency existed on northern Baxter Road and an immediate attempt should be made to stabilize the bluff. As Steven Cohen, the attorney for SBPF, said repeatedly at the time, **“Doing nothing is not an option.”**

As part of the agreement entered into between the parties, SBPF agreed to facilitate the securing of voluntary easements from private property owners to provide alternate access and utilities to northern Baxter Road, should the road be breached.

Since that time the emergency has been abated. In addition, the Town's Emergency Management Director and Head of the Department of Public Works have developed an Emergency Plan that has been adopted by the Board of Selectmen which calls for, in part, the relocation of the road landward within its layout, should it be necessary to do so, thus providing an immediate twenty-to-forty feet of additional protection between the edge of the eroding bluff and the seaward side of the road.

Most importantly, Mr. Cohen reported to the Board of Selectmen (BOS) on August 6 that the parties involved have reached "**an agreement in principle**" to provide voluntary easements necessary for both public and private access to houses on northern Baxter Road, as well as to the historic Sankaty Lighthouse, should it become necessary. Mr. Cohen stated that the next step in the process is for the plan to be reviewed by the appropriate Town staff, followed by a submission to the Board. [For a video clip of Mr. Cohen's presentation to the Board, click on this [link](#).]

Subsequent to Mr. Cohen's update to the Board, the Town staff provided an action plan [page 147] outlining the steps to be taken and a timeline to be followed to provide alternate access and municipal utilities to houses on northern Baxter Road. [August 15 Memorandum from DPW Head Kara Buzanoski also attached as Attachment III.]

With this new information, **relocation of Baxter Road is now a viable option**, obviating the need to attempt to stabilize the bluff with what Dr. Young calls "the nuclear option" of hard-armoring. As Dr. Young has said, "Relocating houses and infrastructure out of harm's way is not doing nothing. It is the sensible and fiscally responsible thing to do."

Softer, more environmentally-sensitive alternatives, such as already exist in front of a number of properties on Baxter Road south of the emergency geotube installation, can now be explored. Further, the ConCom has already indicated that it would be receptive to permitting such installations.

The reality is, as pointed out by the Town's engineering consultant, Nicolle Burnham of Milone and MacBroom, Inc. in a letter to the Board of Selectmen, dated September 25, 2013: "**While the analysis is ongoing, based on the work we have completed to date we have strong reservations about the ability to stabilize Baxter Road for any specific length of time.** While some plans, such as that currently under consideration by the Siasconset Beach Preservation Fund, may have the ability to provide benefit, **we do not believe that any plan can be guaranteed to work for a specific length of time.**" [Emphasis added.]

**4. The decision of the ConCom in this matter is consistent with the best practices of coastal management advocated by the Commonwealth through its Office of Coastal Zone Management (CZM).**

The community of Nantucket has just completed a Coastal Management Plan for town-owned coastal properties. The State Department of Environmental Protection, through its Office of Coastal Zone Management, provided technical assistance throughout the yearlong process.

All involved — the members of the Coastal Management Plan Work Group, the Board of Selectmen, the relevant Town officials and members of the public — became knowledgeable about the best practices espoused by CZM, including: the StormSmart resiliency strategies for coastal communities; No Adverse Impacts (NAI) Guidelines; the overall policy of working with Mother Nature, not against her; and, lastly, doing no harm.

**The decision of the Conservation Commission in this matter, that the project would have adverse impacts and that there are less harmful alternatives, is entirely consistent with these precepts.**

We trust that MEPA will find that this project requires further environmental review and that DEP's ultimate determination in regard to a Superseding Order of Conditions will result in supporting the seven months of work by our Conservation Commission and its decision to deny the project that is **in accordance with the best practices of coastal management advocated by the Commonwealth.**

Respectfully submitted,



D. Anne R. Atherton  
48 Squam Road  
508 228 1060  
[danneatherton@comcast.net](mailto:danneatherton@comcast.net)  
September 8, 2014

ATTACHMENT I: Letter from Dr. Robert Young to Nantucket Conservation Commission, August 8, 2013.

ATTACHMENT II: Comparison of Relevant Sections of Alternative Analyses Contained in Notice of Intent, Baxter Road and Sconset Bluff Storm Damage Prevention Project, July 2, 2013 and Notice of Intent, Baxter Road Temporary Stabilization Application, October 23, 2013.

ATTACHMENT III: Memorandum from Kara Buzanoski, DPW Head to Libby Gibson, Town Manager, August 15, 2014.

Dr. Ernest Steinauer, Chair  
Nantucket Conservation Commission  
4 Bathing Beach Road  
Nantucket MA 02554

August 8, 2013

Re: NOI, Baxter Road and Sconset Bluff Storm Damage Prevention Project

Submitted by: Robert S. Young, PhD, PG  
Director, Program for the Study of Developed Shorelines

Please consider the following comments as you evaluate the permitting of the Siasconset (Sconset) Bluff Storm Damage Prevention Project. I am a coastal geologist with 25 years of experience in coastal science, coastal management, and the evaluation of coastal engineering design. I have international experience along with significant experience locally in Massachusetts. I am currently working with the National Park Service to develop detailed coastal storm and sea-level rise adaptation plans for Cape Cod National Seashore and Boston Harbor Islands National Recreation Area.

I would like to begin by providing a bit of background regarding the coastal management concerns when constructing large-scale erosion control structures like the one proposed for Sconset Bluff. Finally, I will have a list of additional concerns and thoughts regarding the project and my experience with others around the country.

### **How do seawalls, bulkheads, and revetments impact beaches?**

Seawalls, revetments, and bulkheads are shore-parallel structures used to protect the land behind them. Regardless of the specific name used, they all perform the same function; I thus refer to structures like that proposed for Sconset as "seawalls". There is clear, scientific consensus that seawalls, when placed on an eroding or retreating beach will cause that beach to narrow and eventually disappear. The negative effects of seawalls on beaches are so clear that they have been included in textbooks (e.g. Pinet, Nordstrom) and have been the subject of numerous scientific articles (e.g. Hall and Pilkey, 1991; Griggs, 1991). The United States Army Corps of Engineers recognized these problems in a 1981 Technical Note entitled "Seawalls Their Applications and Limitations" (CETN-III-8):

Seawalls protect only the land immediately behind them, offering no protection to fronting beaches. Also on a receding shoreline, recession will continue on the adjacent shore and may even be accelerated by the construction of a seawall. If nearby beaches were being supplied with sand by the erosion of the area protected by a new seawall, the beaches will be starved and will experience increased erosion. Therefore, if a beach is to be retained adjacent to a seawall, additional structures may be necessary.

Hall and Pilkey (1991) point out that there are three types of erosion associated with a sea-walled beach: placement loss, passive erosion and active erosion. *Placement loss* occurs when a shore parallel structure is placed seaward of the dune, bluff, cliff or first line of vegetation, thus immediately reducing the width of the beach (Fig. 1). Rocks placed on the beach during the construction of any rock revetment such as that proposed for Sconset will result in an immediate loss of the upper portion of that beach. Thus, the project will likely result in immediate placement loss.

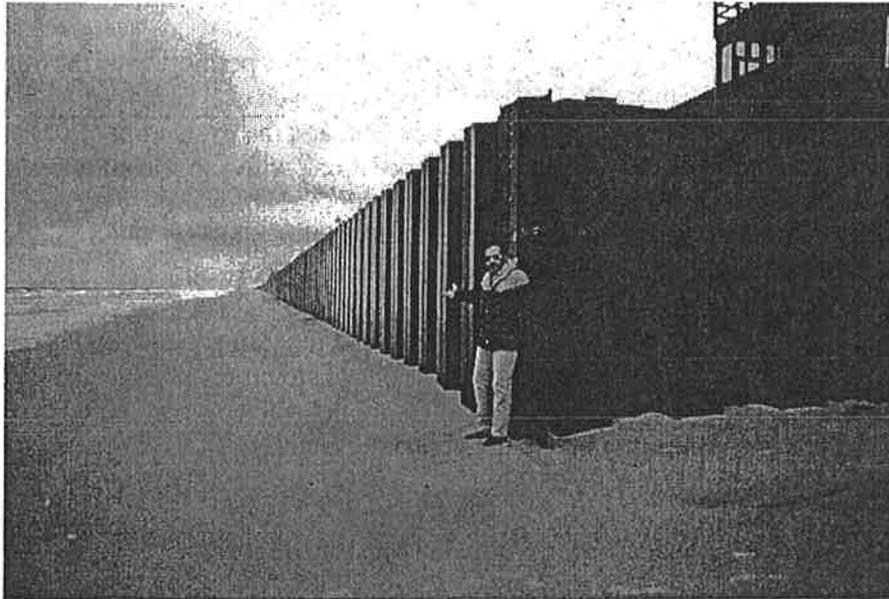


Fig. 1 Placement loss resulting from a seawall at Sandbridge, VA.

*Passive erosion* occurs on an eroding or retreating beach when the dune line or upper beach is armored or replaced by a permanent hard stabilization structure, thereby causing the landward boundary of the beach to have a fixed location (Fig. 2-4). In effect, a “line in the sand has been drawn” beyond which the beach will not be allowed to naturally migrate. The problem is that building a seawall on a chronically retreating shoreline does not halt the erosion or shoreline movement. It simply creates a landward boundary for the ocean shoreline to run into. On an eroding shore (and the vast majority of the sand beaches in the US are eroding), the beach will simply narrow in front of the seawall until it disappears. It should be made very clear that on any sandy shoreline experiencing shoreline retreat, erosion does not destroy the beach. It simply moves the beach landward. However, placing an immovable object such as a large building or a seawall in the way of that retreat will remove the beach, and along with it, any public easement or access. It is this fundamental understanding of passive erosion’s effects on beaches that has caused many states to ban seawalls, revetments and bulkheads on ocean shorelines. Engineers typically do not consider passive erosion when planning for the protection of coastal property, assuming that the goal is to protect an investment, and not the beach. Once the beach (and therefore the public easement) is gone, the only way to restore it is through constant replacement of the sand through beach nourishment. This lesson has been

learned the hard way on many of our nation's most important beaches.

Pre-determining the amount of sand that will be required to protect the wall from becoming undermined and providing an adequate beach for public use and egress is difficult. One cannot simply assume that the sand placed in front of the wall will erode at the same rate as the beach/bluff did before the wall was built. Beach fill projects typically erode faster than natural sand, and the wall can completely change local coastal processes, often accelerating the loss of beach sand during storm event when large waves are engaging the wall. What is clear is this, seawalls and revetments will require frequent beach nourishment projects in perpetuity. Because it would be built on a retreating coastline, the Sconset revetment will result in passive loss of the beach. The nourishment plan to mitigate this passive beach loss should be viewed as completely experimental, as there is no track record of beach nourishment at this location. The long-term costs and sand volumes required may far exceed the ability of the project sponsors to ensure an adequate sandy beach for public use and protection of the revetment. If constructed, the project should include well-defined metrics for sandy beach maintenance. Monitoring of the beach for these metrics should be carried out by an independent third party.



Fig. 2: Passive erosion at Sea Bright, NJ before beach nourishment.

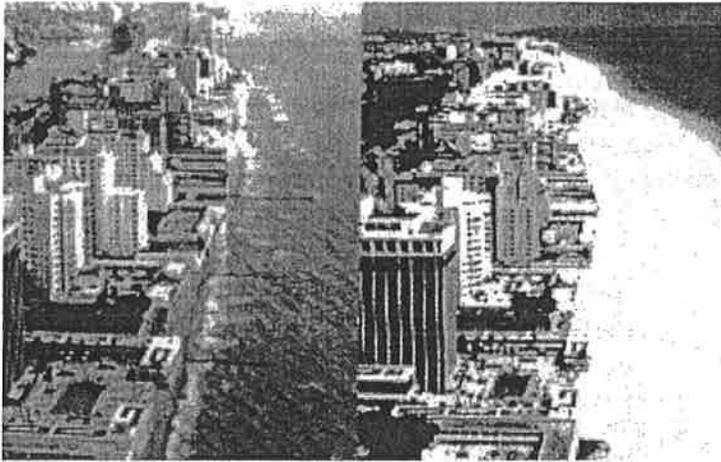


Fig 3: Miami Beach after years of passive erosion (left), and after massive beach renourishment.

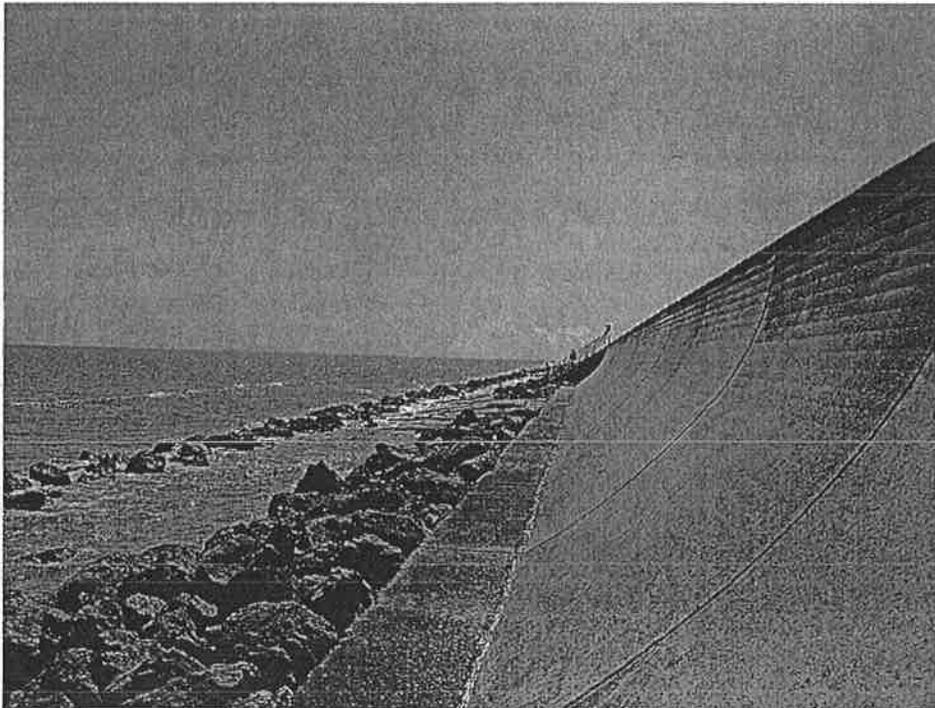


Fig. 4: Passive erosion at Galveston, TX

Finally, *Active erosion* defines any process that accelerates erosion due to the presence of seawall, bulkhead, or revetment. It involves the redistribution of sediment supply to a

beach and/or any modification of shore zone processes due to the seawall. There are three ways in which a seawall can actively degrade a beach: wave reflection and scour, end effect, and reduction in sediment supplied to the beach from the dunes and upland.

There has been a long and vigorous debate within the scientific and engineering community as to whether or not seawalls enhance the erosion of the beaches in front of them through wave reflection and increased scour. Many scientists have argued that this is an important process, while many engineers have been skeptical. In the long run, this process is probably less important to beach loss than simple passive erosion over time. The other two processes of active erosion are more clearly recognized by all parties. They are also significant because they have an immediate impact on neighboring properties.

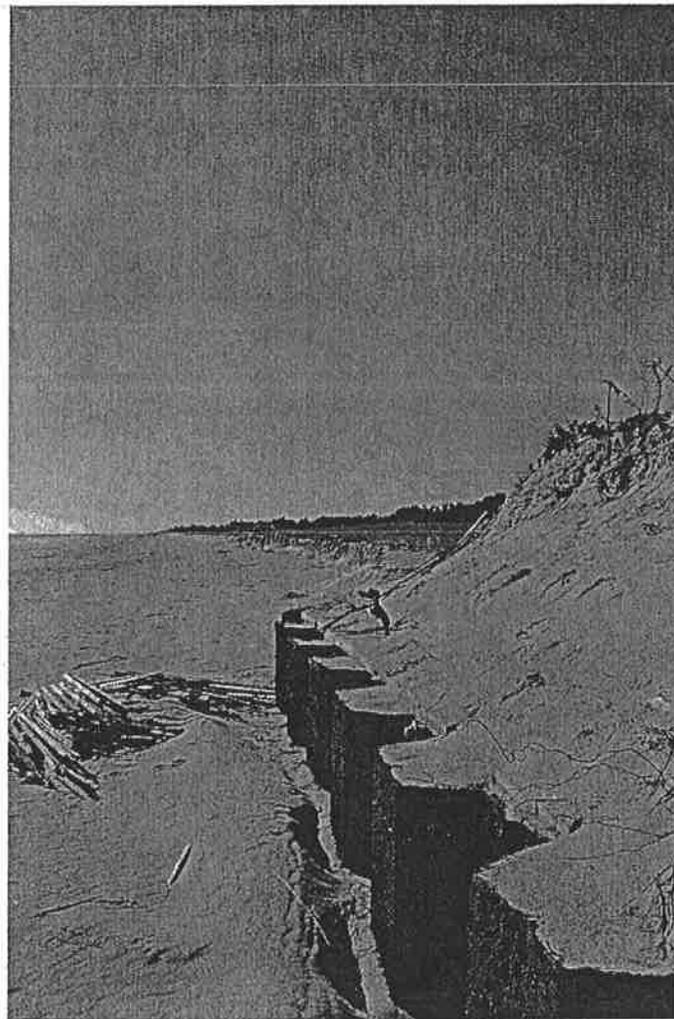


Fig. 5: End effect from a bulkhead, Southampton, NY

The end effect is the result of waves diffracting around the edges of the wall during storms or high water events. It results in a clear increase in erosion at the margins of the

seawall (Fig. 5). The end effect often results in the construction of another seawall on the adjacent property in order to protect it from the increased erosion. End effects have results in numerous neighbor-on-neighbor lawsuits on beaches around the US.

In addition to the end effect, seawalls eliminate the natural sediment supply that would come to the beach through erosion of the dunes and upland behind the wall. Retreating beaches can maintain themselves by receiving sediment that is moving alongshore and by receiving sediment from the dunes and bluffs as the beach erodes. Seawalls seal off the latter as a source of sediment. This sediment would naturally enter the longshore sediment transport system and move down the coast to feed neighboring beaches. As more and more seawalls are constructed, this source of sediment is eliminated and all of the beaches suffer. This serves to enhance the end effect at the small scale and can lead to large-scale increases in erosion for larger or multiple seawalls. The length and scale of the proposed revetment for Sconset Bluff is clearly large enough to have significant downdrift impacts. The impacts may even extend in both directions, because Siasconset is likely at a "nodal point" in the sediment transport system, where sand contributed by bluff erosion moves both to the north and to the south/west. This is similar to the ocean-facing shoreline of Outer Cape Cod between Orleans and Wellfleet, where sediment is transported to the north towards Provincetown, and to the south towards Monomoy Island. The proposed Sconset revetment will also result in active erosion of the coastal zone.

In summary, there is no doubt that choosing to protect coastal property with shore-parallel structures like seawalls, bulkheads, and revetments will ultimately lead to the destruction of the dry beach and any public easement held on that beach. It is for these reasons that many states and localities have chosen to ban the construction of seawalls.

#### **Banning seawalls in legislation, statute and rule:**

It is instructive to examine the justification used by state legislatures when seeking to regulate seawall construction in a desire to maintain the public's interest in the beach. These restrictions occur in states with a wide variety of political leanings and are typically based on a desire to protect the beach as an economic resource and to protect long-standing public beach access, rather than environmental concerns (although environmental concerns are important as well).

The State of South Carolina banned seawalls with their comprehensive Beachfront Management Act in 1987. Much of the impetus for this ban was the fact that the vast majority of the high tide beach had disappeared from the state's most important tourist destination, Myrtle Beach and the Grand Strand. The ban was reaffirmed during Hurricane Hugo in 1989 when many of the "protective" seawalls failed or were overtopped by the storm surge. The author of this memorandum currently sits on the South Carolina Blue Ribbon Commission for Shoreline change. A largely legislative commission charged with reviewing the almost 25-year old Beachfront Management Act. There was no discussion about revoking the seawall ban. It has, by all accounts, served

the state well. The Act states:

**SECTION 48-39-250.** Legislative findings regarding the coastal beach/dune system.

(5) The use of armoring in the form of hard erosion control devices such as seawalls, bulkheads, and rip-rap to protect erosion-threatened structures adjacent to the beach has not proven effective. These armoring devices have given a false sense of security to beachfront property owners. In reality, these hard structures, in many instances, have increased the vulnerability of beachfront property to damage from wind and waves while contributing to the deterioration and loss of the dry sand beach which is so important to the tourism industry.

(6) Erosion is a natural process which becomes a significant problem for man only when structures are erected in close proximity to the beach/dune system. It is in both the public and private interests to afford the beach/dune system space to accrete and erode in its natural cycle. This space can be provided only by discouraging new construction in close proximity to the beach/dune system and encouraging those who have erected structures too close to the system to retreat from it.

The State of North Carolina banned seawalls, and all coastal engineering structures two years earlier in 1985 for similar reasons. Since the ban, only one seawall has been constructed to protect a Civil War Era Fort. And, that seawall has completely eliminated the beach in front of it and caused significant adjacent erosion. The reasoning for the ban is short and straightforward:

**15A NCAC 07H .0308 SPECIFIC USE STANDARDS FOR OCEAN HAZARD AREAS**

(a) Ocean Shoreline Erosion Control Activities:

(1) Use Standards Applicable to all Erosion Control Activities:

(A) All oceanfront erosion response activities shall be consistent with the general policy statements in 15A NCAC 07M .0200.

(B) Permanent erosion control structures may cause significant adverse impacts on the value and enjoyment of adjacent properties or public access to and use of the ocean beach, and, therefore, are prohibited. Such structures include bulkheads, seawalls, revetments, jetties, groins and breakwaters.

**Specific notes on the Baxter Road and Sconset Bluff Storm Damage Prevention Project**

- 1) It must be clearly acknowledged that this large rock revetment will eliminate any beach fronting the bluff. In addition, the structure will deprive downdrift beaches of sediment increasing neighboring rates of erosion while holding the bluff in place.

- 2) Mitigation will be required to maintain a beach in front of the revetment and to keep the toe of the revetment out of the sea. Mitigation will also be required to add sand to downdrift beaches. Predicting the amount of sand required on an annual basis is difficult because the need will be determined by storm frequency along with any local changes to sediment supply and dynamics caused by the structure.
- 3) It has been my experience that mitigation requirements based on any clause requiring that the structure must be demonstrably proven to be the cause of increased erosion or the cause of a downdrift sand deficit are problematic. Proving an increase in erosion on a shoreline is straightforward. Demonstrating direct, indisputable cause and effect in a court of law is almost impossible. Coastal monitoring plans simply can't account for that level of detail, and monitoring the impacts of storms is particularly problematic. In my opinion, one cannot assume that mitigation sand will be ordered for downdrift property owners if it MUST be demonstrated that the revetment is the primary cause (even if the revetment IS the primary cause).
- 4) It is my professional opinion that the project is under-designed for the wave climate and exposure of the bluff. The toe of the wall is not deep enough to account for the variability in the beach profile elevation along such a dynamic shoreline. The narrow beach in front of the wall will also make the structure vulnerable. This is a project on the scale of those typically carried out by the United States Army Corps of Engineers, which are predicated upon a substantial federal interest in property preservation. Keeping that beach and those rocks in place given the extreme wave climate will be impossible, over the long run. In fact, I think that it will be quite a challenge to transfer the rocks from a barge to the shore during project construction.
- 5) Another cautionary note from my experience elsewhere in the US. Once projects like this go in, they never come out. Removing them is more expensive than placing them. To my knowledge, no structure of this magnitude has ever been removed or ordered to be removed. If the structure is built and causes harm or fails, I simply don't believe it will ever be removed. I have never seen it happen anywhere else. What is more likely is that if the structure fails, it will be "improved." This means it will be enlarged or extended at someone's expense.
- 6) Many very bad coastal engineering projects have been permitted during emergency orders, general orders, or in other such situations. I recently watched the construction of the largest rock revetment ever constructed to protect one home. The structure was built with almost no review on Long Island following Hurricane Sandy. Local Town Trustees opposed it, but were powerless to stop it. The structure would never have been permitted by New York DEC during the standard permitting process. I urge you to take your time in reviewing this request. If this is an emergency, then almost every other shoreline in the US is

experiencing emergency conditions. A structure of this magnitude should not be permitted or evaluated hastily.

- 7) I understand that Sconset Bluff property owners have tried many options for slowing the rate of erosion along the bluff. It is to their credit that they did not move straight to the nuclear option of massive hard stabilization. I sympathize with their frustration. Normally, we would recommend beach nourishment; especially since property owners would be willing to cover the majority of the costs. It is unfortunate that large scale beach nourishment is not an option here due to concerns about fisheries impacts. These kinds of concerns have halted beach nourishment projects in other areas as well (e.g. Palm Beach County, FL).
- 8) It is my professional opinion that the logical next step is not the construction of a large rock revetment, but rather, the development of a long-term plan for getting critical infrastructure and threatened property out of harms way. This is a truly long-term solution that one can walk away from. The proposed Baxter Road and Sconset Bluff Storm Damage Prevention Project will require managing, monitoring, and funding forever.

References:

Griggs, G. B., Tait, J. F., Scott, K., and Plant, N. (1991). 'The interaction of seawalls and beaches: Four years of field monitoring in Monterey Bay, California. *Proc. Coastal Sediments '91*. Amer. Soc. Civil Engineers, Seattle, **1 871-1885**.

Hall, M.J. and Pilkey, O.H. 1991. Effects of hard stabilization on dry beach width for New Jersey. *Journal of Coastal Research*, 7 (3), 771-785.

United States Army Corps of Engineers. 1981. *Seawalls Their Applications and Limitations (CETN-III-8)*

Robert S. Young, PhD (Licensed Professional Geologist in NC, SC, FL)  
Director, Program for the Study of Developed Shorelines  
Professor, Coastal Geology  
Western Carolina University  
Belk 294  
Cullowhee, NC 28723  
828-227-3822, FAX 828-227-7163  
[ryoung@email.wcu.edu](mailto:ryoung@email.wcu.edu)  
[psds.wcu.edu](http://psds.wcu.edu)

## NOTICE OF INTENT: ROCK REVETMENT

Baxter Road and Sconset Bluff Storm Damage Prevention Project  
Applicant: Siasconset Beach Preservation Fund (SBPF)  
Date: July 2, 2013  
Prepared by: Epsilon Associates

### 2.0 Alternatives for Road and Bluff Protection

[Document Available Online?]

#### 2.1 Geotextile Tubes

**Geotextile tubes are not well-suited to a high energy environment like Sconset.** Too much scour at the toe could potentially lead to structural failure (even when a scour apron is included in the design). Geotubes are susceptible to damage from vandalism, debris, and storm waves; storm-driven debris may puncture and tear the tube. For this reason, maintenance costs for geotubes tend to be higher than for other alternatives. When ripped open by storm waves, geotextile tubes may fail in place, emptying sand onto the beach and possibly releasing geotextile material to the coastal environment. The release of sacrificial sand would not have any adverse environmental effects since clean, beach-compatible sand would be used to fill the tubes. However, replacement of the geotube would be expected to be required on a frequent basis (one or more times annually). Such replacement often cannot be accomplished between successive storms, potentially leaving the bank vulnerable to wave-induced scarping at the toe (and subsequent slumping of the upper bank, which undermines vegetative stabilization that otherwise works) at the time when protection is most needed. **For these reasons, geotubes are not considered a viable long-term erosion control solution.** [Emphasis added.]

## NOTICE OF INTENT: GEOTUBES

Baxter Road Temporary Stabilization Application  
Co Applicants: Town of Nantucket DPW and SBPF  
Date: October 23, 2013  
Prepared by: Nicolle Burnham, Milone and MacBroom, Inc.

Memorandum: Alternatives Analysis, Attachment A

<http://www.nantucket-ma.gov/DocumentCenter/Home/View/4963>

### Alternative 3

This alternative entails placement of sand-filled geotextile tubes along the toe of slope to provide temporary protection from wave and tidal action. This alternative is largely constructible, the sand fill is readily available, and the option presents a cost effective, short term solution for protecting the toe of slope within the town's study area. In protecting the slope, this treatment may result in short-term slope stabilization. **It is critical to understand, however, that these structures could be overtopped and/or undermined even with detailed design consideration.** Failure of the geotubes could result in failure of Baxter Road and we cannot predict when this may occur. While these measures are considered temporary, the installation of geotextile tubes can be expected to retard slope failure and can be designed to prevent slope failure from normal tidal events. While there would be some impact to aesthetics, we would anticipate this alternative can be permitted locally, given its temporary nature. **For these reasons this alternative [geotubes] is deemed a viable option for the short-term.** [Emphasis added.]



Town of Nantucket  
Department of Public Works  
MEMO

To: Libby Gibson, Town Manager  
From: Kara Buzanoski, DPW Director  
Subject: Baxter Road Drainage  
Date: 8/15/14  
CC: Gregg Tivnan, Asst. Town Manager

The DPW has reviewed the drainage situation on the northerly end of Baxter Road. It has been reported that several heavy rainstorms have eroded the bluff due to heavy flows of stormwater. Sconset Beach Preservation Foundation (SBPF) engaged Blackwell Engineering to design drainage plans to control storm water from potentially eroding the bluff.

We have reviewed the plans done by Art Gasbarro PE of Blackwell Engineering. Infiltrators were proposed that would be installed along the westerly side of the Baxter Road right of way. Past experience by the DPW indicates that the westerly side of the right of way is fully occupied by underground utilities making the installation of infiltrators there overly difficult. As an alternative the DPW proposes the following plan to assess and address possible bluff erosion:

- 1.) Maintain the current emergency plan as accepted by the Board of Selectmen.
- 2.) Block any existing catch basins that may currently discharge towards the bluff.
- 3.) Install an asphalt berm along the easterly sideline of the existing pavement to keep storm water from going over the bluff.
- 4.) Evaluate the effectiveness of the berm. If the berm is not sufficient, install infiltrators within the paved surface to avoid underground utilities on the westerly side of the right of way.
- 5.) Prepare roadway construction plans for the alternate access road over property owned by the Sankaty Golf club. Andrew Vorce is currently negotiating this access.
- 6.) Go to annual Town Meeting for authorization for funding of the access road construction.
- 7.) Prepare sewer construction plans for extension of the sewer from the existing end of the sewer at Isobel's Way.
- 8.) Seek easements for sewer connections to individual houses to the new access road. (Andrew has included this in his negotiations.)
- 9.) Monitor the distance from the bluff to the indicator stakes placed 25 feet from the edge of the pavement.
- 10.) When the bluff reaches 25 feet away from the pavement, begin construction process for new access road.

ELIZABETH TRILLOS 2 GREGLIN AVENUE #402 NANTUCKET,  
MASSACHUSETTS 02554

September 22, 2014

This letter comes to you in support of the Nantucket Conservation Commission's denial of the Notice of Intent for the Geotube installation.

I have owned my home on Nantucket for 29 years and have been a permanent resident for the past 14. My home is located high in Tom Nevers East overlooking Sconset and I've spent a great deal of time watching the storms and erosion in this area. It's my hope that you'll carefully go over the facts of this particular case, hard armoring in general, and all the photographic evidence you have at your disposal before you come to your decision.

We all have had to make decisions in life that we know will reverberate well into the future and leave lasting effects on our lives. The Department of Environmental Protection and The Massachusetts Environmental Protection is now faced with making this type of decision for Nantucket Island. Will you uphold the decision of the Nantucket Conservation Commission or will you compromise the authority given to them by the people of Nantucket and place them in a position that prevents them from protecting our Island's beaches and wetlands, a vital part of our economy, now and in the years to come?

Nantucket's Con. Com is a group of dedicated volunteers many with advanced degrees in science. They've spent hours, days, and months studying the plans for the Geotube Structure that the SBPF hopes will protect the properties on Baxter Road. It's important to note that "property" refers solely to the personal properties that are the privately owned houses along the eroding bluff. Everyone involved in this process concurs that if the Geotube Structure is kept in place it will result in severe changes to, and perhaps destruction of, the town owned beach below the bluff. Unlike other parties that have been involved in this review, Con Com has no personal, financial or political stake,

in their decision. Their decision has been reached based solely on current scientific data, photographic evidence, and site inspections.

I have personally attended most of the Con Com meetings and have found the members to be thorough and conscientious in their review. Every issue of the State and Local Wetland's regulations was carefully reviewed and considered in depth prior to their denial of the NOI.

I urge you to support the NOI denial and help us protect our beach and wetland resources that contribute so much to Nantucket's economy and that of the State of Massachusetts. Public and conservation land should not be sacrificed for the benefit of a few private citizens.

Sincerely,

Elizabeth Trillo

Martha A. Gray  
35 Squam Road  
Nantucket, MA 02554

September 22, 2014

Ms. Purvi Patel  
Executive Office of Energy and Environmental Affairs (EEA)  
100 Cambridge St., Suite 900 (9th Floor)  
Attn: MEPA Office  
Boston MA, 02114

[Purvi.Patel@state.ma.us](mailto:Purvi.Patel@state.ma.us)

RE: Nantucket Conservation Commission

Dear Ms. Patel:

Nantucket citizens look to the State to support our local Conservation Commission (ConCom).

- The Nantucket ConCom reviewed the Notice of Intent for the geotubes over a seven-month period.
- The hearing was a full and fair one.
- Our local ConCom is exceptionally well qualified with three members holding doctorate degrees in science.
- The record is complete and documents the decision reached by the ConCom.

Hard-arming the Sconset bluff with geotubes will result in the narrowing and eventual destruction of the public beach on which the geotubes are installed.

- The beach is a resource protected by both the state Wetlands Protection Act and the local Wetland By-Law.
- SBPF has never, throughout the entire hearing process, asserted that the proposed mitigation will protect the beach. This is one of the reasons the ConCom issued a denial.
- SBPF acknowledges that the beach will eventually be destroyed, dismissing it as a resource to be protected and calling it "the most under-used beach on the island."
- The beach below the bluff in Sconset is a legacy to the citizens of Nantucket from the Proprietors who took affirmative action in the late 1800s when the lots above on the bluff were laid out by the developer.

Overruling the decision of the ConCom will have severe consequences for Nantucket and our natural beaches because it will **set a precedent**, not only for Nantucket, but also for coastal communities throughout the Commonwealth.

- Hard armoring, whether with rocks, wood, steel, concrete (geotubes), destroys beaches.
- Nantucket's Conservation Commission does not permit hard-arming, unless there is no alternative.
- Beaches are a key driver of the Nantucket economy. They are the reason many people choose to vacation here, to invest here, to live here.

Martha A. Gray  
35 Squam Road  
Nantucket, MA 02554

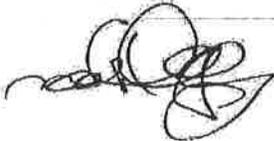
- Because of the scouring caused by hard-armoring on properties at either end of the installation, one hard-armoring installation begets another and another. Once the process begins, it is difficult, if not impossible, to stop.
- SBPF has already stated they intend to extend the hard-armoring of the bluff from 900 feet to almost 5000 feet, running from Sankaty Lighthouse to mid-Baxter Road.
- If SBPF is permitted to hard-armor, other coastal property owners will attempt to do the same.
- There are reasonable alternatives, soft solutions that have been installed on the beach below the bluff and have demonstrated their effectiveness.
- Nantucket's ConCom did not find that the adverse impacts of the proposed project could be mitigated. Mitigation is more than just volume of sand. Mitigation is difficult, if not impossible, to calculate because of the unknowns, such as the timing and frequency of storm events.

The decision of the Conservation Commission is entirely consistent with the best practices of coastal management and erosion control recommended by the State through the Office of Coastal Zone Management (CZM).

- Nantucket has recently adopted a Coastal Management Plan for Town-owned property.
- Throughout this process, the work group received technical advice from staff members of CZM and became informed about the best practices of coastal management recommended by the State, including: StormSmart principles of coastal management; NAI (No Adverse Impact); work with Mother Nature, not against her; and do no harm, to cite a few.
- The decision of the ConCom in this matter is consistent with the State guidelines. Any decision by the State to overrule the local Conservation Commission in this matter would be a political one, not an environmental or legal one.

I appreciate your attention to this matter.

Sincerely,

A handwritten signature in black ink, appearing to read 'Martha A. Gray', written over a horizontal line.

Martha A. Gray

## Patel, Purvi (EEA)

---

**From:** Dirck Van Lieu [dirck@vanlieuphotography.com]  
**Sent:** Monday, September 22, 2014 11:23 PM  
**To:** Patel, Purvi (EEA)  
**Subject:** Nantucket ConCom/SBPF

Ms. Purvi Patel, MEPA

[Purvi.Patel@state.ma.us](mailto:Purvi.Patel@state.ma.us)

Dear Ms. Patel,

We write to voice our concerns about the appeal by the Sconset Beach Preservation Fund of the decision by the Nantucket Conservation Commission to deny the application of the SBPF for the geotextile tube installation below the Sankaty Bluff in Nantucket.

As you know, the geotubes were installed under an emergency certification with the purpose of providing temporary protection for the bluff so the Town of Nantucket could pursue alternate access to the structures on the northern end of Baxter Road. This protection was to be gained by preventing erosion due to wave action at the base of the bluff. We assert that there has been no threat of such erosion during the 9 months since the installation of the structure, but the bluff has suffered considerable losses due to other factors, among them being rain run-off from Baxter Road and surrounding ground, sub-surface run-off from the wetlands on the west side of the road, wind erosion and the freeze/thaw cycles of the winter season. In addition, the edge of the bluff has been weakened by new excavations for new foundations, in some cases, full basements dug where none existed before. Houses that were moved or demolished left behind large holes in the ground that were filled with loose material particularly vulnerable to wash-outs. In spite of the supposed emergency, these factors have never been addressed and the erosion of the bluff has accelerated. These factors cannot be addressed by any structure on the beach below the bluff, meaning that the sacrifices asked of the residents of the island are pointless.

We are disturbed by the claim of the SBPF in their application for the emergency certificate that the lot at 87 Baxter lost 40 feet of land in one year when our photographs show beyond contention that no such loss occurred. This claim was considered important enough the Phillip Weinberg cited it in his letter granting the certificate. We are also note that there were four enforcement orders issued due to violations in the installation process, all of which were discovered by third parties monitoring the work. The false claims and violations undermine any faith we might have that the SBPF will honor the conditions required and promises made that would be vital to the project.

It is clear that the proposed mitigation of erosion losses is unsustainable. By the SBPF's own numbers, the available sand on island is only enough to last a certain number of years, and if the Sconset Beach installation is extended, that amount would be exhausted much more quickly. Furthermore, overturning the decision of the Nantucket ConCom would open the gates for other similar structures requiring mitigating sand. The sand supply would then be gone in a handful of years, forcing tradesmen and our own DPW to import sand from off-island.

The SBPF has publicly stated that they want the town to pay "their fair share" of the costs of these engineered structures. The history of Annual Town Meeting votes indicates that island residents will not be willing to bear the

expense of protecting private homes while sacrificing the beaches that are so vital to the quality of their lives and the local economy.

The geotube installation has destroyed the wetland scenic view and it threatens the beach in front of it. The proponents cannot provide the required assurances that it will do no harm to the beaches to the north and south. The tubes have done absolutely nothing to slow the erosion of the Sankaty Bluff, and are, in fact, unable to do so. The applicants have yet to analyze the true causes of the bluff erosion or to address them.

The Nantucket Conservation Commission made the only proper choice in rejecting the SBPF's Notice of Intent and their decision should be upheld at all levels.

Please read ["Why the Conservation Commission Made the Right Decision in Denying the Geotube Project"](#).

Respectfully yours,

Dirck and Sharon Van Lieu

Van Lieu Photography

Dear Ms Patel.

September 22, 2014

Of all the issues coming to your department, the current appeal by The Sconset Beach Preservation Fund, to overturn The Nantucket Conservation Commission's ruling on their project; must stand as one of the most contested ones.

I will not waste your time lecturing you on the science and legalese; subjects on which you and all members of MEPA are the experts.

The main concern I like to bring to your attention is a topic which has not been discussed to any extent.

Common Sense.

As you all well know, any wall, whatever it's nature, eventually leads to the destruction of the beach in front. SBPF has come with their solution to this problem; proposing a ' nourishment ' program.

Their plan as You well know, consist of dumping thousands of cubic yards of sand over the bluff, attempting to rebuild the beach year after year in PERPETUITY.

Who in their right mind would propose such lunacy and expect the residents of this Island to believe and embrace it ? This is one of those cases when the cure is worse than the disease. To deliver the sand would put thousands of dump trucks on our roads and the Sconset streets; to power those trucks would require millions of gallons of fuel, which most be shipped to the Island and carried by tanker trucks through the Town streets.

All this activity will turn our peaceful Island into a permanent construction site.

The results: Air pollution, traffic congestion, damage to our infrastructure and lowering the quality of life for generations to come.

All the above will come at a cost of seven hundred thousand dollars per year ( SBPF's figures ).These figures will increase as the years go by.

It is clear this is a disaster in the making.

The threat to our Island finances, and the natural environment that brings thousand of visitors a year; the lifeblood of our economy, is to great to allow this wall to remain in place.

As a property owner for the last thirty years and a year round resident since 2000; I respectfully ask you to support the Nantucket Conservation Commission, by upholding their ruling.

Jose F Trillos  
8 Parson lane  
Nantucket MA  
02554

**Patel, Purvi (EEA)**

---

**From:** Robi Blumenstein [robi.blumenstein@chdifoundation.org]  
**Sent:** Tuesday, September 23, 2014 4:27 PM  
**To:** internet, env (ENV); James.mahala@state.ma.us  
**Cc:** Patel, Purvi (EEA); jcarlson@nantucket-ma.gov; R G Peterson  
**Subject:** MEPA Project Review of Baxter Road and Sconset Bluff project, Nantucket, MA

Re: MEPA Project Review  
Project Name: Baxter Road and Sconset Bluff  
EEA Number: 15240  
DEP Superseding Order of Conditions

Dear Secretary Bartlett and Mr Mahala:

I am writing as a property owner and tax payer in Nantucket, Massachusetts concerned with the possible adverse impact of the above project to encourage the DEP to uphold the ruling of the Nantucket Conservation Commission on the project and to urge MEPA to require a full Environmental Impact Report before taking further action.

Given the possible significant, long-term and potentially irreversible environmental impact of this project on *public interests* it is essential that your offices review this matter with all due deliberateness and make decisions based on the best available engineering and scientific evidence including a full Environmental Impact Report.

Thank you for your attention to this matter.

Robi Blumenstein  
32 Squam Road  
Nantucket, MA 02554

## Patel, Purvi (EEA)

---

**From:** John Osborn [jeosborn1957@gmail.com]  
**Sent:** Friday, August 22, 2014 1:28 PM  
**To:** Patel, Purvi (EEA)  
**Cc:** Mahala, Jim (DEP); Josh Posner  
**Subject:** Sconset Beach

Dear Purvi:

Many thanks to you and Jim for coming out to the Island.

I would simply reiterate the comment that I made at the meeting. My family, like others, have renovated an old home and been forced to move it back from the bluff's edge. The complicated web of regulations and the (frankly) utterly dysfunctional nature of governance in the Town of Nantucket with the overlapping jurisdictions of various commissions, etc. has made a challenging circumstance far worse. I do not believe that a fair reading of the laws and regulations of the Commonwealth require that we establish to near certainty that there will never be any adverse impact to anyone, anywhere on the Island in order to take steps to protect these historic dwellings. If that is the standard, then we (policymakers and constituents) effectively are valuing the Sconset bluff houses at zero.

What I would ask of you and your agencies is the following: please be balanced in your perspective and recognize that the underlying policy objectives associated with the statute allowing for protection of pre-1978 dwellings is clear and applicable here; please be consistent in your ruling and bear in mind that hard surface protection and vegetation have been allowed in other parts of the Commonwealth and the Island; please exercise leadership as important regulatory authorities and voices who can help to reconcile what are still diametrically opposed perspectives as to the wisdom of protecting the bluff.

John and Deborah Osborn  
75 Baxter Road  
Siasconset, MA 02564

**Patel, Purvi (EEA)**

---

**From:** David Golden [david@goldensf.com]  
**Sent:** Friday, August 22, 2014 9:10 PM  
**To:** Patel, Purvi (EEA); Mahala, Jim (DEP)  
**Cc:** JCarlson@nantucket-ma.gov; mhartnett@Epsilonassociates.com;  
sconsetbeachpreservationfund@gmail.com  
**Subject:** Thank You

Dear Ms. Patel and Mr. Mahala,

Thank you very much for participating in the information session at 87 Baxter Road in Sconset on Wednesday.

I have been coming to Baxter Road for the past 25 summers, and I have been a homeowner (#70 Baxter) for the past dozen years. Since I reside in California and do not get to vote in Massachusetts, I particularly appreciated the opportunity to learn more about the issues and the local governmental processes involved.

There is little that I can add to the scientific debate, except to note that the "early returns" on the geotubes appear to be very good. I suspect that all parties will have to be comfortable with some level of uncertainty as the ramifications of climate change are complex and will continue to be understood only with more study and the passage of time. In that context, it seems to me that the work being proposed along the bluff presents a unique opportunity for a thoughtful, scientifically-supported process in which there is virtually no public risk and from which there is much to learn that could benefit all of Nantucket (and much of Massachusetts). How often can it be said of a proposed erosion control project for the benefit of the public that financial risks are being borne by private homeowners rather than the public at large? How often can it be said of a proposed erosion control project for the benefit of the community that "failure criteria" have been established that would trigger removal of the geotubes and that such removal has effectively "been paid in advance" through an escrow process?

My point is a relatively simple one: given the extraordinary threat to Baxter Road and its concomitant infrastructure, given the thoughtful science and engineering brought to bear on the geotube project, given the asymmetry in which private homeowners are willing to pay for steps that will provide substantial public benefit (including remediation if the process simply doesn't work as it is supposed to), how can we not try thoughtful deployment of geotubes along the affected bluff for some reasonable trial period. It seems to me that there is so much that we can collectively learn from this process in a relatively short period of time that it would be truly unfortunate to let this opportunity pass the community by.

Thank you again for your good work.

Very truly yours,

David Golden  
70 Baxter Road

## Patel, Purvi (EEA)

---

**From:** K & L [yodoky@yahoo.com]  
**Sent:** Sunday, August 31, 2014 4:58 PM  
**To:** Patel, Purvi (EEA); Mahala, Jim (DEP)  
**Cc:** jcarlson@nantucket-ma.gov; mhartnett@Epsilonassociates.com;  
sconsetbeachpreservationfund@gmail.com  
**Subject:** Sconset Beach geotubes

Thank you for your onsite visit of August 20, 2014 to the Sconset Bluff on Nantucket. We hope the face-to-face meeting with the Bluff helped to add a visual component to the written data.

Last summer and fall we attended numerous meetings/hearings that the Conservation Commission held. The Commission's countless hours are greatly appreciated, but we believe their now denial of a once-approved project is wrong.

The SBPF project has been carefully researched scientifically by a number of coastal engineers, geologists and other experienced people in the field. The aim has always been to do not only what is best for Baxter Road, but also for the whole island. Saving Baxter Road not only keeps the well-travelled path to Sankaty Light, but also saves the taxpayers huge money by not having the Town re-route and create an alternate access road for public services. The Sconset Bluff beach is seldom used; in our 10+ years here we have never seen anyone swim or even set up a towel and umbrella. Barely a handful of people walk it a season.

Several years ago a ConCom approved jute bag project was allowed on the South Shore of Nantucket. This non-scientific barrier was not monitored or mitigated, created a peninsula and ultimately did not work. The resulting jute bag break up in the waters was a hazard to commercial fisherman as well as to the Steamship ferry when a piece of one of the bags fouled the propeller. In fact at one of the ConCom meetings last fall, a fisherman said if jute bags were approved for the Sconset Bluff, he would slash them open. Fishermen are passionate about their safety and prefer something heavy -- like the geotubes or even rocks.

We question whether ConCom has acted in a fair and balanced way toward SBPF. We do not understand the volumes and volumes of data they seem to require from SBPF. To us it reads as perhaps politically motivated, delay tactics or is it, as one person commented, "analysis paralysis"? SBPF literally spent years researching in order to find the best solution. It seems we all benefit from harnessing and dealing with nature in some way -- levees in the U.S. and around the world, dams for power and energy, cement block homes to withstand tornadoes, solar panels, etc.

Don't homeowners on the Bluff have the right to protect their homes? SPBF has always been considerate of neighbors and is carefully monitoring the geotubes. Science is on their side. We fully support the geotubes and believe the whole island could have future benefits.

Kyle Latshaw  
Loretta Yoder  
113 Baxter Rd.

Elizabeth Claudy  
115 Baxter

**Patel, Purvi (EEA)**

---

**From:** Sanni Judy [ssjudy@gmail.com]  
**Sent:** Wednesday, September 03, 2014 9:16 PM  
**To:** Patel, Purvi (EEA); Mahala, Jim (DEP)  
**Cc:** Paul Judy; Mary Ann; Carol Cronin; David Cronin; Hannah Gretz; John Judy  
**Subject:** RE Siasconset Bluff Meeting Aug 20  
**Attachments:** MEPAcommentletter2014 (2).pdf

Dear Ms. Patel and Mr. Mahala,

Enclosed please find my letter, to be submitted into the formal record for the upcoming deliberations. Many thanks for your attention to this case.

Sincerely,

Sanni S Judy  
PO Box 877, 108 Baxter Road  
Siasconset, MA

September 2, 2014

To Ms. Purvi Patel and Mr. James Mahala

Massachusetts Department of Environmental Protection

[Purvi.Patel@state.ma.us](mailto:Purvi.Patel@state.ma.us), [Jim.Mahala@State.MA.US](mailto:Jim.Mahala@State.MA.US)

RE: DEP & MEPA and 'Sconset Beach Preservation Measures in Siasconset, MA

Dear Ms. Patel and Mr. Mahala:

Thank you for coming to visit Baxter Road. You handled a difficult meeting well.

As a longtime seasonal resident whose extended family has since 1976 occupied homes inland from Baxter Rd, and having seen many neighbors force painful decisions, I write to strongly advocate the following:

- DEP's support for leaving in, and completing, the currently built geotubes;
- approval to plant vegetation on bare areas of the bluff;
- approval to manage surface water runoff better;
- clarity on whether Nantucket's Conservation Commission is denying protection methods to Baxter Road that are being permitted elsewhere on island;
- a challenge to the ConCom's interpretation of the law regarding pre-1978 house lots.

It's human nature to want to keep our neighborhood community intact. The historic and economic value of this road to all of Nantucket - as evidenced by tour bus traffic, wedding photographers and picture postcards - is also considerable. Alternate roadways will cost millions and impair homes that weren't designed to face these unexpected trafficways. Such concerns led us to support SBPF's efforts to find a workable mechanism to protect the neighborhood from rapid bluff erosion.

Many Baxter Rd residents over recent years have pursued solutions vigorously at great expense. All remedies including jute bags have proven ineffective in this particular site. It's unclear what data our ConCom relied on to assert that jute bags would work. I wouldn't support the geotubes initiative if I believed that a simpler option would make a meaningful difference.

**We ask DEP to support permitting for the geotube project as-built, plus the originally specified fourth layer of tubing and soft return "wings" at the far ends.** A completed system would provide immediate protection to at-risk homes, and test whether it performs as promised at this particular site. We could see the effectiveness locally, as well as the impact on the entire coastline.

Whatever the doubts beforehand, now that a limited line of geotubes is in place, **it would seem like a colossal waste to dismantle it without further study.** There are likely to be valuable discoveries. It's not certain what the evidence will show. The only certainty is that it would be tragic not to use this opportunity to learn more. Future debates can benefit from facts rather than personal opinions. Passionate beliefs are dividing us. We should be building fact-based consensus.

As a resident just outside the reach of the geotubes, I think the maintenance/monitoring protocols and the escrowed removal funds are sufficient precautions against a negative surprise.

We strongly urge permission for bluff residents to have the **right to plant vegetation**. Vegetated portions of the bluff are faring much better than the bare areas. It's a mystery why it's not allowed.

Plantings could also reduce the amount of **windborne bluff sand** which has become a significant nuisance to us. We see clouds of sand blow over the bluff on windy days and deposit thick layers of beige on our oceanside neighbors' roofs. As longtime residents, we've also observed an accelerating rate of sand blowing at our house, 300+ ft inland. Sand abrasion and sand accumulation are a house maintenance issue for us, inside and outside. Too often prickly wind makes working in the yard uncomfortable. Any relief via bluff vegetation would help.

~~We'd like DEP to support permits for ways to **manage surface water runoff**. Now, stormwater runoff is~~ carving gaps into the bluff edge and gouging hazardous gullies into driveways including ours. July's mild hurricane, Arthur, did significant runoff damage to our gravel driveway. It sounds like there's a street drain installed and ready to deploy within the current Geotube structure. We'd like to see it permitted and put into use right away.

Nantucket's ConCom has by some accounts been issuing **protective technology permits in various sites around the island**. Not just for vegetation planting and jute bags, but for marine mattresses, hard armoring and raised jetties. It's of great concern if Sconset residents are treated differently from other island neighbors. We trust that's something DEP can review.

Last, I raise a concern about Jeff Carlson's comment on how Nantucket's ConCom is interpreting the **law concerning pre-1978 homes**. He asserts that the lots from which pre-1978 structures have been removed - no matter how recently - lose the right to protection. If Mr Carlson is right, it would create a peculiar incentive: the longer ConCom delays each permit application, the more houses will be forced to move away, voiding the homeowners' legal right to protection and putting adjacent homes at greater risk. I don't question ConCom members' motives. I simply observe that such an interpretation would lead to strange incentives and therefore surely can't be correct.

We're hoping that DEP's expertise can help us toward a workable outcome that considers all parties' legitimate concerns.

Sincerely,

Sanni Judy  
108 Baxter Road  
Siasconset, MA 02564

cc: Paul and Mary Ann Judy; Carol and David Cronin; Hannah Judy Gretz; Josh Posner

**Patel, Purvi (EEA)**

---

**From:** sbclawprof@aol.com  
**Sent:** Saturday, September 06, 2014 3:54 PM  
**To:** Patel, Purvi (EEA); Mahala, Jim (DEP)  
**Subject:** Sconset Beach Preservation Fund (SBPF)

I write to urge you to approve the SBPG geotube proposal for protecting the Sconset Bluff.

I won't repeat all the points made by others about the need for the project and the extraordinary efforts made by the designers to insure that no harm is done and that remediation will occur in the unlikely event the project fails.

I do want, however, to make one small point.

Opponents seem to feel that we must "let nature take its course" and that "any interference with natural processes" is wrong. This position sets up a false dichotomy between what is natural and unnatural. Because of the use of carbon fuels and global warming, erosion has increased. How can that possibly mean that erosion is a natural process if a major cause of erosion is our use of fossil fuels? This project, which seeks to alleviate the negative effects of human activity and thereby prevent further environmental destruction, deserves approval.

Stephen Cohen, 116 Baxter Road, Professor of Law, Georgetown University

## Patel, Purvi (EEA)

---

**From:** Laurie Webb [laurierwebb@hotmail.com]  
**Sent:** Saturday, September 06, 2014 5:27 PM  
**To:** Mahala, Jim (DEP); Patel, Purvi (EEA)  
**Cc:** JCarlson@nantucket-ma.gov; mharnett@epsilonassociates.com;  
sconsetbeachpreservationfund@gmail.com  
**Subject:** Geotubes Protecting Pre-1978 Homes on Baxter Road, Nantucket

Dear Mr. Mahala and Ms. Patel,

Thank you both for your time at the hearing and site visit on August 20 at 87 Baxter Road regarding the geotubes protecting pre-1978 homes along Baxter Road on Nantucket.

We hope that you were able to see while on site how very unobtrusive, visually, the geotubes are, covered by sand.

As was made very clear in the hearing by Maria Harnett of Epsilon Associates, the geotube project has been painstakingly designed using the very best scientific research and evidence available.

To address concerns of those on neighboring beaches, 1 1/2 times the amount of sand that erodes from the Sconset Bluff will be added twice each year.

The cost has been and will continue to be borne by the neighborhood. (The neighborhood will be very well motivated to continue to add the promised sand because not doing so would jeopardize our beautiful Baxter Road, our homes, and our property, as sun can cause deterioration of the geotubes if they are not kept covered by sand).

The cost of removing the geotubes if any unforeseen problem should arise is in an escrow account.

Everything possible has been done to insure that the geotubes will not cause harm. But great harm will be done if the geotubes are not allowed to remain.

Aside from the loss of even more pre-1978 homes than have already been lost, removing the geotubes would mean the very certain loss of Baxter Road, quite possibly this winter.

Baxter Road is an incredibly scenic, historic road which leads from the little village of 'Sconset (with many homes from the 1700's) past lovely, old summer homes (built beginning in the late 1800's) to the Sankaty Lighthouse. From our windows on the west side of Baxter Road, we love seeing the constant parade of people young and old, on foot and on bicycles, from all over our country and all over the world, enjoying Baxter Road. With historic homes and gardens of great charm and beauty and spectacular views of the ocean between homes, it is certainly no wonder that the road is so loved and enjoyed. Recently a local guide who has been conducting tours of Nantucket for over 30 years noted in a letter to the editor of our local paper that Baxter Road ("the historic homes, the bluff walk, and the charm of the neighborhood") is always the highlight of her tours of Nantucket.

Making the entire island of Nantucket an "Historic District" has unfortunately in some ways diminished the great importance of our very beautiful and historic neighborhood, and our ability to protect it.

As we deal with the effects of rising sea level, our geotube project could provide a unique opportunity to learn about a system which may well be a solution to similar problems in other parts of the state and world.

We hope to be able to thank you for, in accordance with MA law, allowing us to continue to protect with our geotubes pre-1978 homes and, along with them, our much loved and very important historic road and neighborhood.

Sincerely,  
Laurie and Toby Webb  
96 Baxter Road, Nantucket

Sent from my iPad

## Patel, Purvi (EEA)

---

**From:** Dorothy Bailey [dbailey0927@gmail.com]  
**Sent:** Sunday, September 07, 2014 10:12 AM  
**To:** Patel, Purvi (EEA); Mahala, Jim (DEP)  
**Cc:** JCarlson@nantucket-ma.gov; mhartnett@Epsilonassociates.com; Sconset Beach  
**Subject:** Support of the Baxter Road geotube project

My family and I have owned our home at 100 Baxter Rd. for 19 years, and prior to owning we rented in Sconset for 10 years. We are located directly across the street from the geotube installation. Although we are emotionally and financially invested in this project (and I have recently joined the SBPF board) our appeal to you is based on the project's objective merits. This installation has been professionally engineered and responsibly constructed to protect the toe of the bluff while continuing to provide sand to northern and southern beaches. It is being carefully monitored to insure that this is indeed the case, and should it fail funds have been escrowed for its removal. The project has been privately funded and, if allowed time to be tested, will provide Nantucket with technology applicable to other parts of the island.

Erosion is a fact of life up and down the east coast, and in most other coastal areas it seems that communities and local, state and federal government agencies are working together to restore beaches and protect private property from the effects of rising sea levels and other catastrophic events. Unfortunately such cooperation does not seem to exist in Nantucket. Our appeal to you is that you overrule the short-sighted attempt to dismantle the geotubes before they can be fairly tested. With the monitoring systems in place, the commitment to sand replenishment, and the funds escrowed to dismantle if it is found to be harmful or failing, what could possibly be the downside to allowing the system to succeed?

Thank you for your time and consideration.

Dorothy and David Bailey

**Patel, Purvi (EEA)**

---

**From:** Dallas Kirk [dallaskirk@comcast.net]  
**Sent:** Sunday, September 07, 2014 12:13 PM  
**To:** Patel, Purvi (EEA); Mahala, Jim (DEP)  
**Cc:** jcarlson@nantucket-ma.gov; mhartnett@epsilonassociates.com;  
sconsetbeachpreservationfund@gmail.com  
**Subject:** Support for Sconset Beach Preservation

Dear Jim and Purvi -- I am a 20 yr. resident of Nantucket. I have seen what beach erosion has done to all around the island. Many home owners have gone to great lengths to preserve their home and property. Most of them have failed while the a few have succeeded, but damaged their neighbors. The SBPF and their engineers have learned from these projects and incorporated the best designs yet tried. We should continue this engineering test to learn even more about protecting Nantucket.

Surely, we must give Mother Nature a run for her money. Civilization would never have progressed had we done otherwise.

The generosity of SBPF to support the project without community funding is truly unique and should be celebrated by every tax payer on Nantucket. The Board of Selectmen is also to be commended for their support.

My request is that you allow this project to continue so we can increase our ability to protect this valuable resource.

Very truly yours,

Dallas Kirk  
30 India Street

## Patel, Purvi (EEA)

---

**From:** philippe [philippe.wells@gmail.com]  
**Sent:** Monday, September 08, 2014 12:20 PM  
**To:** Patel, Purvi (EEA); Mahala, Jim (DEP)  
**Cc:** jcarlson@nantucket-ma.gov; mhartnett@epsilonassociates.com;  
sconsetbeachpreservationfund@gmail.com  
**Subject:** Support for Siasconset Beach Preservation Fund

Dear Ms Patel and Mr Mahala,

Thank you so much for coming out for the Sconset site visit in August. It meant a lot to everyone involved for you to come and have an in person experience of the Sconset bluff.

I am writing in support of the efforts of the Siasconset Beach Preservation Fund (SBPF) to implement erosion control measures to save the Sconset shoreline.

I am a resident of Newton, Massachusetts, and I have been coming to Sconset for 45 years. I think Sconset is a wonderful place, where people from all over Massachusetts can come to appreciate and connect with nature in a unique setting.

I have five children who love spending time in Sconset every summer. The opportunities they have to connect with nature in Sconset - the ocean, the beach, the bluff, the moors - are amazing. There is nothing like this in Newton. To have so many different land and seascapes, all in close proximity, all on a scale that kids can take in and appreciate and love, is very unique.

I attended the meeting on Wednesday, Aug 20th, and came away with the sense that the concerns of the Sconset residents (year-round and summer) are best served by supporting the erosion control measures proposed by SBPF.

There are many reasons to support the project:

- 1) Sankaty lighthouse is a beautiful spot to visit. It is one of the principle attractions on Nantucket. It has already been moved once, and there is no room to move it again. Let's keep it where it is.
- 2) Sankaty lighthouse is best and most simply accessed by Baxter road, which also should be protected.
- 3) The bluff walk is a unique asset. It is a public good, which deserves to be preserved and maintained for future generations.
- 4) I have been coming to Sconset for 45 years. It has been my experience that when erosion happens, it happens quickly (i.e. from one or two storms), and on a large scale. If we don't do anything now, we are only one large storm away from potentially losing Sankaty lighthouse, portions of Baxter road, as well as other, unprotected parts of Sconset.
- 5) The damage we are witnessing is, at it's root, a man-made problem. Rising sea-levels combined with higher-intensity storms are in my opinion what has led to the increased and increasing erosion of the last 20 years. The scientific consensus is that global warming has brought us to this place, and that global warming is man-made. Let's protect nature, i.e. the bluff, from this man-made problem.

6) From a legal perspective, I believe the bluff warrants this protection. Currently there are a number of empty lots on the bluff, which apparently don't qualify for the legal protection given to prior 1978 housing. But these lots would still have pre-1978 houses on them if the bluff were already properly protected.

Every week the legal dithering goes on, we are at danger of losing more protected housing (pre-1978 housing). I would argue that the whole bluff should be protected under the pre-1978 housing stature, it still would be almost entirely pre-1978 if we had properly protected it all along.

7) Given the dramatic erosion that can be caused by one storm alone, I feel that this is about more than just Baxter road. If we don't start protecting the bluff, we could quickly find ourselves in a situation where other portions of Sconset are at risk.

Sconset is a beautiful town in its own right. It is a tourist destination for residents from the entire state of Massachusetts. It is a place where kids can bike, pick berries (the bike paths are full of edible berries), can learn about and come to appreciate nature. It is worth protecting.

---

8) One of the main counter-arguments to erosion protection appears to be that the sands of the bluff are what's needed to replenish beaches elsewhere.

First of all, the erosion protection measures include sand replenishment for exactly that purpose.

Second of all, when a big storm hits (and that's what causes the erosion) that sand that erodes away doesn't seem to benefit anybody. I have heard of or seen no evidence that in years of big erosion losses other areas of the island receive a disproportionate buildup of sand. Rather, it seems that large storms are mostly lose-lose: The bluff loses, and the rest of the island loses as well.

9) Other communities in Long Island and New Jersey are spending millions of federal and state dollars to preserve their shoreline. Why shouldn't we be able to allow a privately funded effort to proceed here?

10) The geotubes being used here are the best, most up to date technology we can use for this particular location. We are not talking about putting up an antiquated technology, like a seawall.

We need to use the best technology we have now. I think most people involved would accept the science behind global warming. It it too much to ask for these people to also accept the science behind erosion management?

Thank you so much for taking the time to get involved in this. I hope we can protect the Sconset bluff for our benefit and the benefit of future generations as well.

Respectfully,

Philippe

## Patel, Purvi (EEA)

---

**From:** Carol Cronin [c.cronin@comcast.net]  
**Sent:** Monday, September 08, 2014 6:51 PM  
**To:** Patel, Purvi (EEA); Mahala, Jim (DEP)  
**Cc:** Sanni Judy; Hannah Judy; Paul Judy; Mary Ann; sconsetbeachpreservationfund@gmail.com  
**Subject:** Sconset Beach Bluff

Dear Ms. Patel and Mr. Mahala,

I was unable to attend your recent visit to Sconset to talk about and view the bluff issues that has been under discussion for quite some time. Other family members did attend and reported that they found the meeting very informative.

As long time seasonal residents near Baxter Road who would be affected if it closes due to bluff erosion, I wanted to indicate my support for the following:

1) Continue to leave in and allow the completion of the currently built geotubes. It seems that this privately funded effort offers the opportunity to learn more about effective strategies to save an important island area. The findings may be relevant in other areas throughout Massachusetts facing similar issues. And, if it doesn't work, funds have been set aside to remove it.

2) Urge other erosion mitigation strategies beyond the geotubes that can help the bluff, such as planting vegetation on the top and other strategies to help manage surface water runoff.

This has been a difficult issue to follow given the many technical, engineering, legal and political aspects. There are strong opinions on many sides and sometimes lack of clarity or seemingly inconsistent application of rules or logic. I hope that you will make a reasoned judgement based on what you view as the evidence.

Thank you for this opportunity to comment.

Carol and David Cronin  
117 Sankaty Road  
Siasconset, MA 02564

cc: Paul and Mary Ann Judy; Hannah Judy Gretz; Sanni and John Judy

## Patel, Purvi (EEA)

---

**From:** Paul Carini [carini228@gmail.com]  
**Sent:** Tuesday, September 09, 2014 12:56 PM  
**To:** Patel, Purvi (EEA); Mahala, Jim (DEP); JCarlson@nantucket-ma.gov  
**Subject:** Nantucket 'Sconset Bluff

Lady and Gentlemen,

We wish to comment on the subject issue. We are long-time summer residents of Wauwinet, Nantucket, one of the areas with coastline potentially subject to harm from hard-armoring the Bluff. While we are certainly concerned about any negative effect in our area, we oppose any decision which would require removal of the installed geo tubes at this time. Our reasoning is that now, since they have been installed, whatever the controversy over the methods and politics, why in the world not give the project at least one full winter to assess the results. The SBPF has committed to remove the geo tubes if there is sideline erosion. Let's at least give this installed potential solution a chance. Tearing these out and installing something else will further potentially harm the area. The alternative has no better proven reliability. Here is a chance, with significant imbedded cost, to test what is there. To tear these out now makes no common sense to us.

Thanks for hearing our views.

Paul and Judy Carini  
104 Squam Road  
508-228-0316

**Patel, Purvi (EEA)**

---

**From:** Kit Murphy [sconset02564@gmail.com]  
**Sent:** Tuesday, September 23, 2014 2:41 PM  
**To:** Patel, Purvi (EEA); Mahala, Jim (DEP)  
**Subject:** DEP Comment Period-Baxter Road and Sconset Bluff Stabilization Project

September 22, 2014

Dear Ms. Patel and Mr. Mahala,

Thank you for coming to Nantucket in August and for all the time and effort you have spent on this project. It has been greatly appreciated by me and many others.....on both sides of the debate.

Much has been written and debated about this project and it has been very emotional and taxing to the entire community so I will not waste your time repeating those arguments now. I am simply going to ask DEP to be balanced in its decision and recognize that the policy objectives associated with the State allowing for the protection of pre-1978 dwellings is clear and applicable and have been met with this project. Please uphold your prior ruling on this matter.

Sincerely,

Katherine Q. Murphy

## Patel, Purvi (EEA)

---

**From:** Jeanne Dickinson [jrdickinson@earthlink.net]  
**Sent:** Sunday, September 21, 2014 3:50 PM  
**To:** Sconset Beach; Patel, Purvi (EEA); Mahala, Jim (DEP); JCarlson@nantucket-ma.gov; mhartnett@Epsilonassociates.com  
**Subject:** Re: DEP Comment Period Extended

Dear Sir: I write in support of the efforts of the Siasconset Beach Preservation Fund to protect and preserve the Baxter Road and Sconset Bluff Stabilization Project. I have supported the SBPF for close to 25 years, through many different attempts to control the erosion. The present construction seems better than previous attempts, and should certainly be given a chance to succeed. What has been lost sight of in all the debate is that many of these houses are well over one hundred years old. Our original house was built in 1886, as was its neighbor to the immediate south. (Our house burned down in 1978 and was rebuilt as near to the old house as the Historic District Commission would allow.) Shortly after we bought the property in 1940, there were blackout shades in the windows and German submarines patrolling just outside the shoals in front of the house. The houses may have changed hands many times, and have been modernized and upgraded, but essentially they have been homes and part of the historic landscape of Nantucket Island. I urge you to support the SBPF to proceed with their efforts to preserve this historic environment. Sincerely, Jeanne R. Dickinson, 49 Baxter Road

## Patel, Purvi (EEA)

---

**From:** Holly Pagon [hmpagon@icloud.com]  
**Sent:** Tuesday, September 23, 2014 10:48 AM  
**To:** Patel, Purvi (EEA); Mahala, Jim (DEP)  
**Cc:** JCarlson@nantucket-ma.gov; mhartnett@Epsilonassociates.com; Sconset Beach  
**Subject:** Sconset Magic

I am writing in support of the SBPF's efforts to save the North Bluff in Sconset. I have been a summer resident of Baxter road since 1969 and first came to Sconset when I was 10 days old in 1961. My parents live at 106 (formerly 105) and I live at 28. The house I grew up in has been moved twice to avoid falling off the bluff. The first time was in the 1980s, to edge of the road. The second time was in 1999, to the other side of the road, hence the change in address.

It's a wonderful old house, built in the 1920s, still uninsulated, open post and beam, perfect for summer living. I still get a longing for my childhood when I walk through the front door. The thing I don't miss, is the large groups of people wandering through our front yard where the Bluff Walk used to be. I'll never forget one particularly loud passerby saying: "What a lovely house! I wonder if anyone lives here?" and my mother rushing to the front door exclaiming: "Yes! We do!"

What is truly amazing to me, is how many of my peers have returned to Sconset to raise their families. When it became apparent that Baxter Road was in jeopardy, many of those families have come out to support us (see attached photo). It just wouldn't be Sconset without Sankaty Head lighthouse to guide us home at night. Saturdays and Sundays wouldn't feel right if you couldn't walk your dog, ride your bike, or simply stroll along Baxter Road.

If so many East Coast beachfront communities have benefitted from projects similar to our Geotube project then why can't we proceed? Almost every person I know in Sconset, year round or summer resident, is supportive of the project. It's worked for almost a year now. If they have to take the geotubes out, what would happen if we have another crazy winter like last year? Would my 85 year old parents have to deal with moving their home a third time???

I ask you to vote to keep the project in place...and come enjoy the magic of Sconset.

Respectfully yours,  
Holly Matteson Pagon

