



Town Of Newbury
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Dear Deerin:

This letter documents the response of the Town of Newbury (the Town) to the Beach Scraping Workgroup Report distributed by the Massachusetts Executive Office of Energy and Environmental Affairs on May 17, 2010. We have included herein a list of questions, concerns, and comments pertaining to the abovementioned report to insure that the Town's position is included as a part of the public record. This letter has been drafted in conjunction with the consultant to the Town, Vine Associates, Inc., and with Dr. Peter Rosen, Professor of Earth and Environmental Sciences at Northeastern University. Please note that we appreciate the State's willingness to address the issue of beach scraping and the Technical Panel's participation in the process. That said, we would like to raise the following points:

- The Technical Panel provided a generalized, theoretical set of conclusions regarding the potential outcomes and impacts of beach scraping. They focused on a select group of scientific studies on which to base their findings and concluded broadly that, "beach scraping at Plum Island would likely increase the erosion problem." However, many of the papers provided to the Workgroup documented that beach scraping, when undertaken in a responsible, well-planned manner, helped mitigate erosion problems and had minimal impacts. The papers that showed favorable outcomes from beach scraping include, but are not limited to: Brunn 1983, Herrington 1994, McNinch & Wells 1992, Tye 1983, Kana & Svetlichny 1983, Kana 2002, and Dare 2003. The Technical Panel appears to have heavily relied upon a few papers that document negative impacts of beach scraping (e.g., Kratzmann & Hapke 2008 and Conaway 2005) and on their own academic opinions of theoretical beach dynamics.

- With all due respect, it should be noted that Dr. Hapke was a member of the Technical Panel and therefore her ability to be “disinterested” may have been affected by her previous work that reported negative impacts of beach scraping. The study she led on Fire Island (Kratzmann & Hapke 2008) evaluated a beach scraping program where the borrow area was above the wave run-up line, which is fundamentally different than having a borrow area in the intertidal zone, low tide terrace, or migrating ridge, as proposed by the Town. Using the Fire Island study as a basis for commenting on beach scraping where the borrow area is in the intertidal zone should be done with caution.
- It appears that the Workgroup and Technical Panel may have made some assumptions about the Town’s proposed beach scraping program that are not necessarily true. At the time of the May 7, 2010 Workgroup meeting, the Town had not yet formulated a concrete plan for the exact methods and timing of beach scraping. Instead, we had sketched out some hypothetical ideas and feasibility calculations, and we were waiting for input from the Workgroup to further develop a plan that would utilize the best science and management practices. Below are some of the assumptions we believe the Workgroup made:
 - The May 17, 2010 Workgroup Report assumes that the Town proposed to push sand from the intertidal zone across the beach up to the base of the dunes using bulldozers. This methodology was not set in stone. Another option identified in the literature, not reviewed by the Technical Panel, is to pick up sand from the intertidal zone, low tide terrace, or migrating ridge using a front end loader and drive it across the beach to be placed at the dune toe. This option was not mentioned in the Workgroup Report.
 - The Workgroup Report appears to assume that the Town would only utilize beach scraping during discrete “emergency” events, such as during/after significant storms. However, we have expressed on numerous occasions that we would consider a more long-term, low-volume, maintenance-based approach to beach scraping, during which scraping occurs in accretionary periods to reconstruct dunes. An emergency event may also be mitigated within this context. We would propose three possible scenarios in which beach scraping might be utilized: (1) in an emergency situation immediately after a storm event; (2) in response to an increase in the background erosion rate (an erosion “hotspot”), as seen recently on Annapolis Way; or (3) for on-going maintenance and dune rebuilding.
 - It should be noted in the summary of the May 7, 2010 meeting that the estimates provided for the amount of sand needed to be scraped in the proposed pilot program area (5,000 cubic yards) was a gross estimate and was only one possible scenario. This rough calculation was done as a feasibility estimate. There are many other options available in terms of the amount of sediment scraped and the dune reconstruction design.

- The survey of other state’s regulations pertaining to beach scraping is somewhat inconsistent with and more limited than an independent survey completed by the Plum Island Foundation. We are not promoting the Plum Island Foundation report, but we feel that these discrepancies, which are summarized in the Table 1, should be addressed.

Table 1: Comparison of EEA findings on whether coastal states allow beach scraping versus findings documented by the Plum Island Foundation.

	EEA	Plum Island Foundation
Alabama	n/a	Yes
California	n/a	Yes
Connecticut	Yes?	Yes
Delaware	n/a	Yes
Florida	n/a	Yes
Georgia	n/a	Yes
Hawaii	n/a	Yes
Louisiana	n/a	Yes
Maine	Yes, for emergencies	Yes
Maryland	n/a	Yes
Massachusetts	n/a	No
Mississippi	n/a	Yes
New Hampshire	No	Yes
New Jersey	n/a	Yes
New York	No	Yes
North Carolina	Yes	Yes
Oregon	Not covered by regulations	Yes
Rhode Island	No	Yes
South Carolina	Yes, for emergencies	Yes
Texas	No	Yes
Virginia	n/a	Yes
Washington	n/a	Yes

- The Workgroup Report focused on whether beach scraping was allowed in other New England states. Yet, it is worth noting that the barrier island system of Plum Island is more analogous to those of North and South Carolina, where scraping is allowed under certain circumstances, than to many New England settings.
- During the May 7, 2010 meeting, the Technical Panel agreed that it was difficult to predict the results and impacts for beach scraping at a specific location (such as the proposed project area on Plum Island). The Technical Panel indicated that you must have site-specific data to determine if beach scraping could be effective without significant negative impacts; the only way to obtain this data would be to conduct a pilot study.

- The Workgroup also agreed at the May 7, 2010 meeting that the amount of material needed for beach scraping in the pilot program area on Plum Island is relatively small (on the order of 5,000 cubic yards). We believe that this program could be consistent with what many of the scientific studies show: that if you scrape small amounts of sand in a controlled manner, you can mimic natural sediment transport processes and the impacts are usually minor. Monitoring of a pilot beach scraping program could provide the data necessary to determine what the benefits and impacts are.
- In the context of this discussion, it seems appropriate to mention the need for Massachusetts to define the term “emergency” with regards to coastal hazards. Other states have very specific definitions for when a structure is considered to be under an emergency situation. For example, South Carolina defines an emergency as when a structure is within 10 feet of erosion (see p. 23 of the EEA Workgroup Report). Having a similarly specific definition for Massachusetts would eliminate much of the uncertainty and ambiguity from our current regulatory structure regarding coastal hazards.
- The Technical Panel argued that scraped sand would be more easily eroded by storms and may be more readily transported downshore or offshore. The Workgroup Report failed to mention that the sediment placed by scraping would be stabilized with dune grass and fencing. The scraping could be completed in spring, such that few storm waves would reach the dunes for many months and the dune grass would have the most time to get established. In addition, it should be noted that sediment deposited at the base of the dune from beach scraping would have similar erodibility compared to sand brought in from off-site sources for nourishment (as an alternative to beach scraping) or from natural aeolian dune deposition.
- The Town would like to follow up on the suggestion made during the May 7, 2010 meeting to apply for FEMA/MEMA grants to assist homeowners with putting their homes up on pilings and/or moving them back from the dune scarp, if feasible.
- The Technical Panel indicated that there are some significant questions still unanswered regarding the sediment dynamics on Plum Island, including: why there are erosion hotspots that seem to shift location, why the erosion rate in this area appears to have increased in the last few decades, and what the littoral drift patterns really are. Addressing these questions through a comprehensive, regional study may provide valuable information for management of the dune/beach system that could limit the need for future erosion control measures. While Plum Island has been the site for numerous beach dynamics studies over the past 40 years, which provides a solid background of knowledge, the Town would strongly support a scientific undertaking of this kind. It may be advantageous to pull together the individuals that have a long history of studying Plum Island to ensure that all available data and resources are being fully evaluated.

We would like to once again thank the State and the members of the Workgroup for their efforts in expediently addressing the use of beach scraping on Plum Island, especially in light of the urgency of this matter for many residents whose homes are threatened by the severe erosion that occurred this winter. The May 7, 2010 meeting of the Workgroup and the subsequent summary report are an important first step in addressing this issue. We would like to note that the conclusions documented in the May 17, 2010 report were not the result of a vote or consensus among the Workgroup members; representatives of the Town, as members of the Workgroup, were never given the opportunity to comment on a draft of the May 17, 2010 report. The comments and discrepancies listed in this letter, however, demonstrate that the discussion should be far from over. It is the opinion of the Town that, with more study and consideration, a beach scraping pilot program should be taken more seriously.

Sincerely,



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Town of Newbury Conservation Agent

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