

17 June 2021

Nantucket Conservation Commission
2 Bathing Beach Rd.
Nantucket, MA 02554

Re: Siasconset Beach Preservation Fund (SBPF) Remediation Plan

Dear Commissioners:

In this letter we seek to explore a draft remediation plan for the Conservation Commission to consider imposing on SBPF to make up the historic sand mitigation shortfall and bring mitigation volumes into compliance based on the annual requirement as specified in the Order of Conditions.

In previous submissions to the Commission, we have provided estimates for the cumulative shortfall in mitigation sand for the geotube project. One of us (Ruthven) estimated a shortfall of 46,537 cy through December 2020, while the other (Kriebel) estimated a shortfall of 47,405 cy through mid-January 2021. Both values were determined the same way, and differ only by a few weeks time in the end date of the calculation.

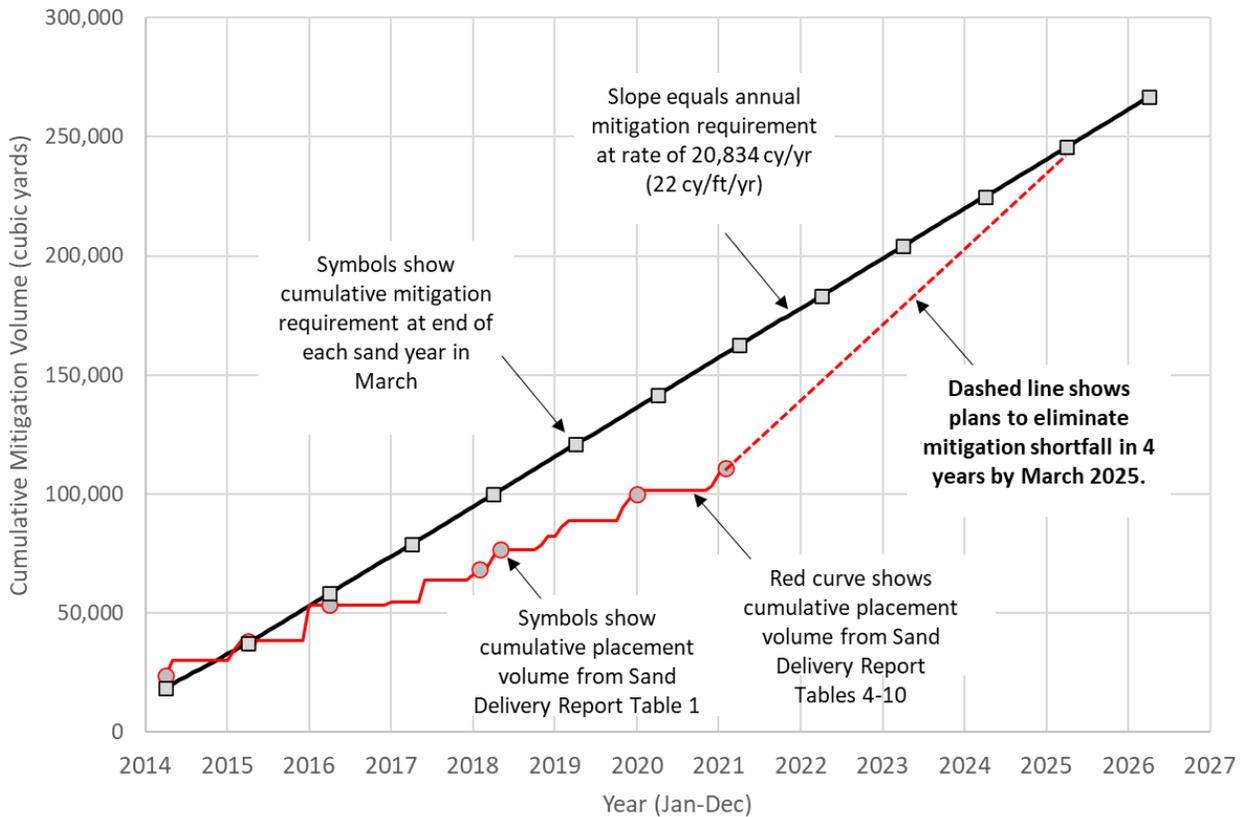
Each of us has independently determined that the cumulative shortfall at this point exceeds two full years' worth of sand, and both of us agree that – for the good of Nantucket beaches - this shortfall will need to be made up to bring the project back into compliance with the Commission's OOC and DEP SOC.

To develop our proposed mediation plan, we start with a historic short fall of approximately 47,000 cy at the start of 2021. If sand has been placed on the beach in Jan-June 2021, the Commission can certainly amend this plan to reflect sand amounts placed in the past 6 months. As an assumption, we also note that at the time of construction, from Dec 2013 through March 2014, SBPF placed 39,204 cy either as sand within the geotubes or as mitigation. So there is evidence that placement of this volume of sand within a few months' time is possible.

Given that the mitigation requirement was last met over five years ago in March 2016, there is urgency to make up the shortfall. Ideally the shortfall could be made up immediately. But to make up the shortfall within 1 year, SBPF would have to place nearly 68,000 cy in the current year (20,834 cy annual requirement plus 47,000 cy catch up). Among other issues, we recognize that unless sand is barged to the site, placement of 68,000 cy in one year by the truckload would be tremendously disruptive to the community.

As a result, we believe a more realistic remediation plan should balance the need for greater annual sand volumes with the desire to limit the number of truckloads of sand. We also think it important to keep the placement volumes below the historic maximum of 39,204 cy so that it is clear that the plan is achievable.

We therefore propose a 4 year catchup plan. The 4-year catchup plan would require annual placements in the next four years of 32,584 cy. Of this, 20,834 cy would meet the existing annual requirement while the additional 11,750 cy (each year for 4 years) would count toward the catchup. After four years, the annual placement would revert to the 20,834 cy. The remediation plan is illustrated graphically in the figure below.



The “catch-up” sand should be placed in areas north of the geotubes. This sand should not be part of the geotube sand template but should be made more readily available to downdrift beaches. Placement should occur in a low berm at the base of the bluff and above the mean high water line. Based on documented bluff volume losses to the north, and based on the increased shoreline erosion north of the project evident in the monitoring data, placement should occur between the north geotube return and the area near the Hoicks Hollow Road beach access site. If permissible, use of the Hoicks Hollow Road access for a portion of the mitigation sand would lessen the number of truckloads using Baxter Road.

The Commission should establish a firm timeline for placement of the additional sand. The Order of Conditions now has a sand placement schedule requiring placement of up to 12 cy/lf in April, an additional 6 cy/lf in November, and the balance of 4 cy/lf (to meet 22 cy/lf/yr) in the November-March time frame. Summer on Nantucket is an important season to the community; therefore, we are proposing a timeline for placement of catchup sand that begins sediment deliveries in October of each year. To achieve the 11,750 cy per year of catchup sand, we suggest a simple placement schedule as follows:

1. Placement of 4,000 cy in October
2. Placement of 4,000 cy in December
3. Placement of 3,750 cy in January-March.

We also believe that it would be useful for the Commission to have an end-of-December update on the placement of the additional mitigation sand. This may consist of a letter and sand delivery table from SBPF, due 31 December, documenting the quantity and placement locations of the added mitigation sand. This would provide the Conservation Commission an initial benchmark to evaluate if SBPF is meeting the remediation plan. This would supplement the normal more-extensive reporting done in Annual report. The second deadline of March 31 for the Annual Report provides the commission a second benchmark to assess if SBPF is adequately meeting the obligations set forth in the Order of Conditions.

Another critical component of the plan is public access to the monitoring data. In our view, the monitoring data is required by Town through the Conservation Commission and should be accessible to the public to ensure full transparency and useability. If the monitoring data were transferred electronically over to the Town of Nantucket GIS system, it would allow impartial review of the monitoring data by coastal engineers and scientists, as well as the residents of Nantucket who are interested in understanding how the project may be affecting the Town shorelines.

We appreciate the opportunity to present our plan for making up the deficit in mitigation sand placement. We encourage the Commission to adopt a definitive plan to ensure the continued health of Nantucket's shoreline.



Trey Ruthven.....
Applied Coastal Research and Engineering
truthven@appliedcoastal.com
508-539-3737



David L. Kriebel, PhD, PE
Coastal Analytics LLC
dlkriebel@gmail.com
410-703-5146