

April 17, 2020

Job No. 2016-0002-01

Maria McFarland, Administrator  
West Tisbury Conservation Commission  
P.O. Box 278  
West Tisbury, MA 02575

Sent via email: [concomm@westtisbury-ma.gov](mailto:concomm@westtisbury-ma.gov)

**Re: Monitoring Report 20**  
Rip-Rap Revetment  
30 Beach Pebble Road  
West Tisbury, MA  
Map 1 Lot 50  
DEP File No: SE 79-0270

Dear Maria,

Woods Hole Group has been retained to continue post-construction monitoring of the beach directly in front of the rip-rap revetment that was constructed during the winter/spring of 2009 at the above referenced property. Per Special Condition #32 of the Order of Conditions (SE 79-0270), four (4) beach monitoring profile stations were established in front of the revetment to assess the impact of the structure on the coastal beach. The stations were established at four equally spaced locations near the base of the revetment at an elevation of 7.0 ft NGVD (3 western stations) and 9.0 ft NGVD (eastern station). The stations were marked by drill holes in the revetment stones and painted orange for ease of visibility. The location and elevation of the survey stations are shown on the plan entitled "As-Built Plan for: Beach Pebble Realty Trust", dated 8-11-09. The Order of Conditions requires that the level of the beach in front of the revetment be visually monitoring twice yearly during the Fall and Spring. It further requires that when the beach level is at or below the threshold elevation of 4.5 ft NGVD for two consecutive observations, beach nourishment according to the Plan and construction protocol should be performed.

This letter presents the results of the Spring 2020 monitoring that was conducted on April 14, 2020. Previous monitoring was conducted on the following dates:

- Post construction - June 24, 2009
- Fall monitoring #1 – September 17, 2009
- Spring monitoring #2 – March 18, 2010
- Fall monitoring #3 – September 29, 2010
- Spring monitoring #4 – April 7, 2011
- Fall monitoring #5 – October 13, 2011
- Spring monitoring #6 – March 29, 2012
- Fall monitoring #7 – October 15, 2012
- Spring monitoring #8 – May 3, 2013



- Fall monitoring #9 – November 11, 2013
- Spring monitoring #10 – May 14, 2014
- Fall monitoring #11 – September 28, 2014
- Spring monitoring #12 – May 9, 2016
- Fall monitoring #13 – September 7, 2016
- Spring monitoring #14 – March 31, 2017
- Fall monitoring #15 – September 14, 2017
- Spring monitoring #16 – May 7, 2018
- Fall monitoring #17 – October 26, 2018
- Spring monitoring #18 – April 10, 2019
- Fall monitoring #19 – September 20, 2019
- Spring monitoring #20 – April 14, 2020

Photographs providing visual evidence of the beach condition with respect to the stations are provided below for the initial post construction period (June 24, 2009) and the most recent survey on April 14, 2020. In addition, a summary table is provided at the end of the report that compares the beach elevations over time.

### Post Construction Photographs – June 24, 2009



Overview of revetment and initial beach nourishment June 24, 2009; view looking northeast.



Monitoring Station #1: Beach at elevation 8.0 ft NGVD (1 ft below survey mark) on June 24, 2009.



Monitoring Station #2: Beach at elevation 7.0 ft NGVD on June 24, 2009.



Monitoring Station #3: Beach at elevation 7.0 ft NGVD on June 24, 2009.



Monitoring Station #4: Beach at elevation 7.0 ft NGVD on June 24, 2009.



**Spring Monitoring #20 – April 14, 2020**



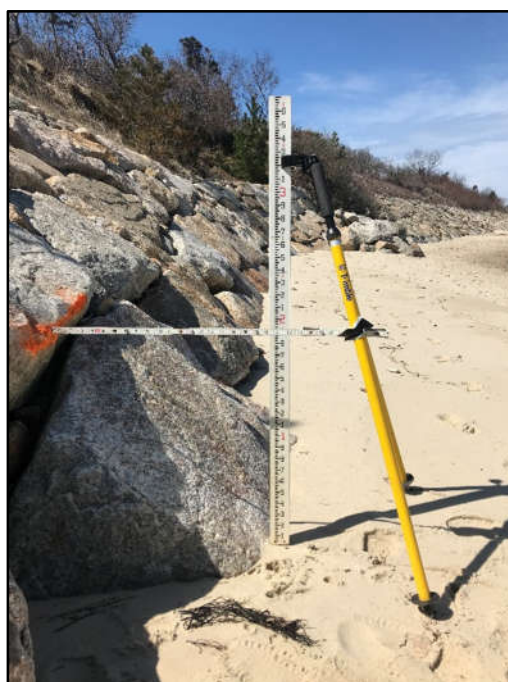
Overview of revetment and coastal beach on April 14, 2020. View looking southwest.



Monitoring Station #1: Beach at elevation 6.0 ft NGVD (3.0 ft below survey mark) on April 14, 2020.



Monitoring Station #2: Beach at elevation 4.9 ft NGVD (2.1 ft below survey mark) on April 14, 2020.



Monitoring Station #3: Beach at elevation 5.1 ft NGVD (1.9 ft below survey mark) on April 14, 2020.



Monitoring Station #4: Beach at elevation 5.0 ft NGVD (2.0 ft below survey mark) on April 14, 2020.

The following table provides a summary of the beach elevations at each of the monitoring stations relative to the survey marks set at 7.0 ft NGVD (3 western stations) and 9.0 ft NGVD (eastern station), from 2009 to 2020. The monitoring data and photographs show that the beach exhibits seasonal variations in elevation, with more sand present on the beach during the fall monitoring period. During the spring monitoring period the beach typically contains less sand and more rock material, as the sand has been carried offshore by winter storms, exposing the underlying cobble and gravel beach. The elevation data show that the beach level consistently lowered following construction of the revetment, for a period of approximately 2.5 years (to Dec. 2011). The spring 2012 survey, however, showed that the beach elevation recovered to its Fall 2011 levels. The most recent survey in April 2020 shows a sandy beach with lower elevations at stations 1-3. Elevations at all four monitoring stations were above the 4.5 ft NGVD threshold during the April 2020 site visit. Based on the monitoring data collected to date, the threshold for renourishment of the beach has not been reached. We will continue to monitor the site with the next survey planned for the Fall of 2020.



Survey Date	Beach Elev. (ft, NGVD) Sta. #1	Beach Elev. (ft, NGVD) Sta. #2	Beach Elev. (ft, NGVD) Sta. #3	Beach Elev. (ft, NGVD) Sta. #4
6-24-2009	8	7.0	7.0	7.0
9-17-2009	8	7.0	6.7	6.7
3-18-2010	7.5	7.0	6.3	6.5
9-29-2010	7.5	7.0	6.0	7.0
4-7-2011	6.5	5.9	5.5	4.3
10-13-2011	6.4	5.2	5.0	4.5
12-2011 (VLS survey)	5.2	4.8	4.1	3.7
3-29-2012	6.4	5.2	5.0	4.7
10-15-2012	7.1	6.1	6.1	6.0
5-3-2013	6.1	5.7	4.8	5.6
11-11-2013	6.0	5.7	5.3	4.7
5-14-2014	6.6	5.9	6.2	5.0
9-28-2014	6.8	6.1	6.4	5.5
5-9-2016	6.5	5.5	5.1	5.1
9-7-2016	6.6	5.6	5.3	4.3
3-31-2017	6.5	5.7	4.8	3.8
9-14-2017	5.8	4.9	4.8	4.1
5-7-2018	6.1	5.4	5.4	4.5
10-26-2018	6.1	5.6	5.8	5.3
4-10-2019	7.3	5.0	4.8	4.3
9-20-2019	7.4	5.2	5.2	5.0
4-14-2020	6.0	4.9	5.1	5.0

If you have any questions, or require any additional information, please give me a call at 508-495-6225.

Sincerely,

Leslie Fields  
Coastal Geologist

MLF/ker

cc: Francisco Borges (via Megan Woodward: [mwoodward@dbfos.com](mailto:mwoodward@dbfos.com) )