

Joint MEPA & DEP Site Visit

Baxter Road and Sconset Bluff Stabilization Project EEA No. 15240 & DEP File No. SE48-3115

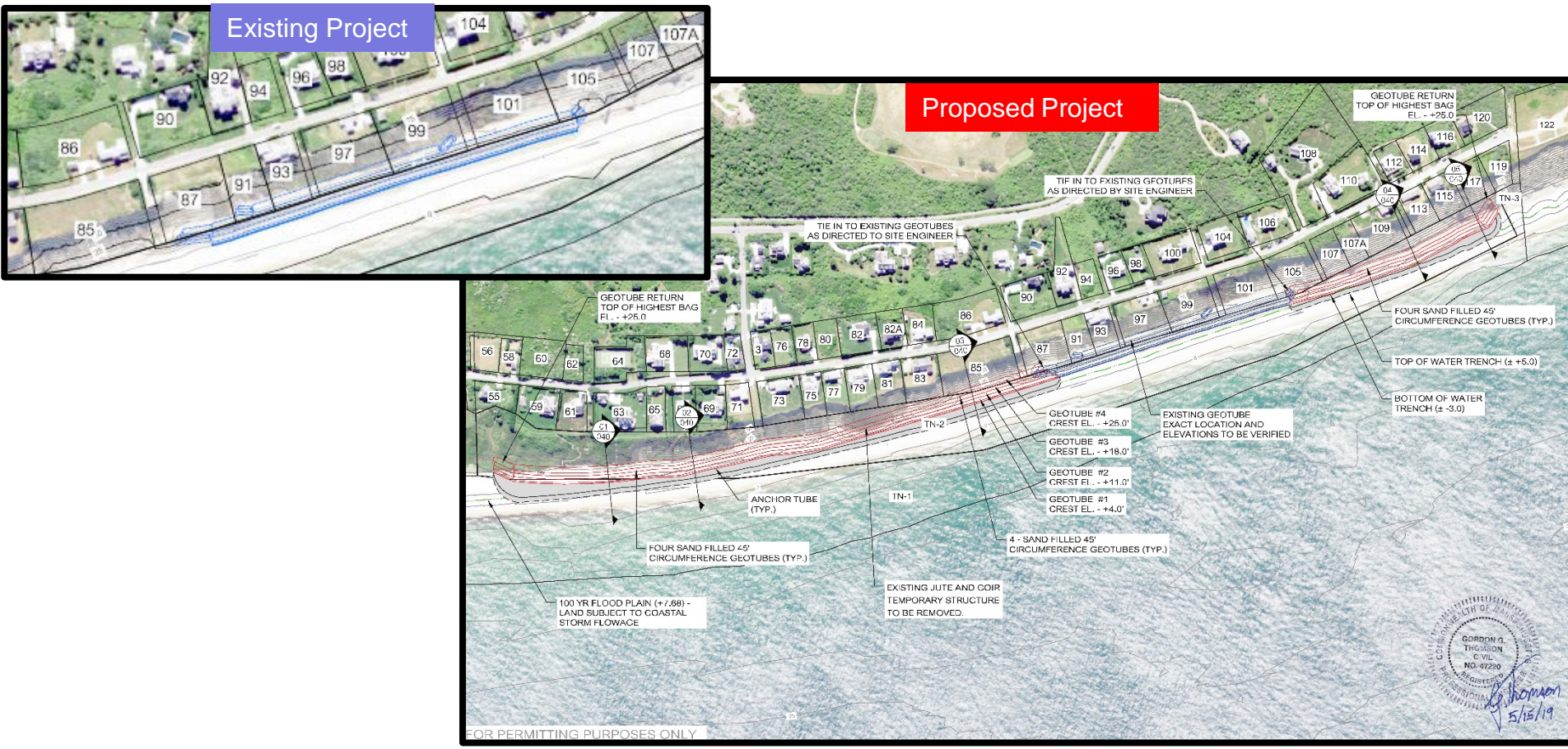


August 29, 2019

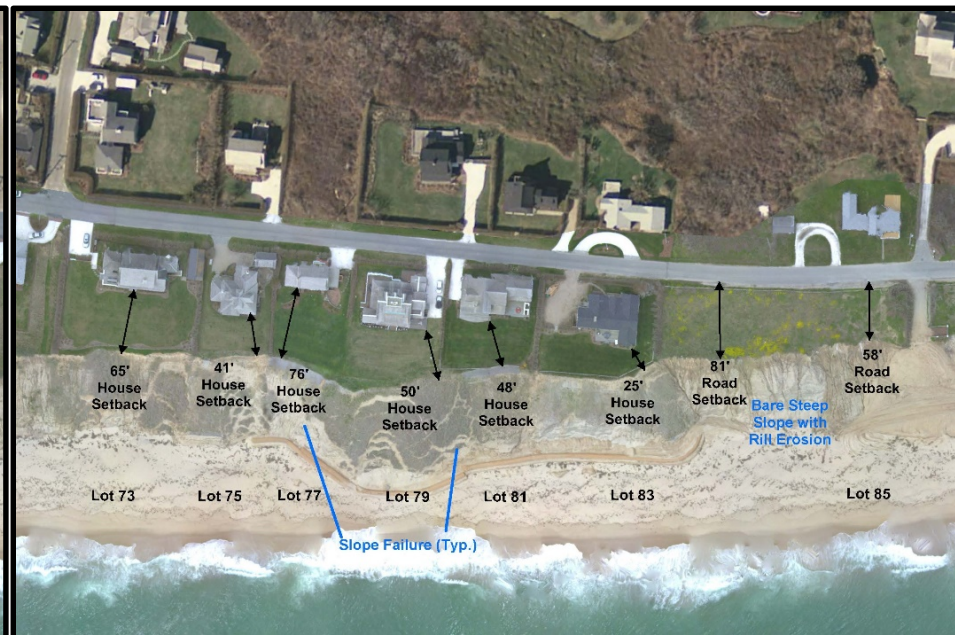
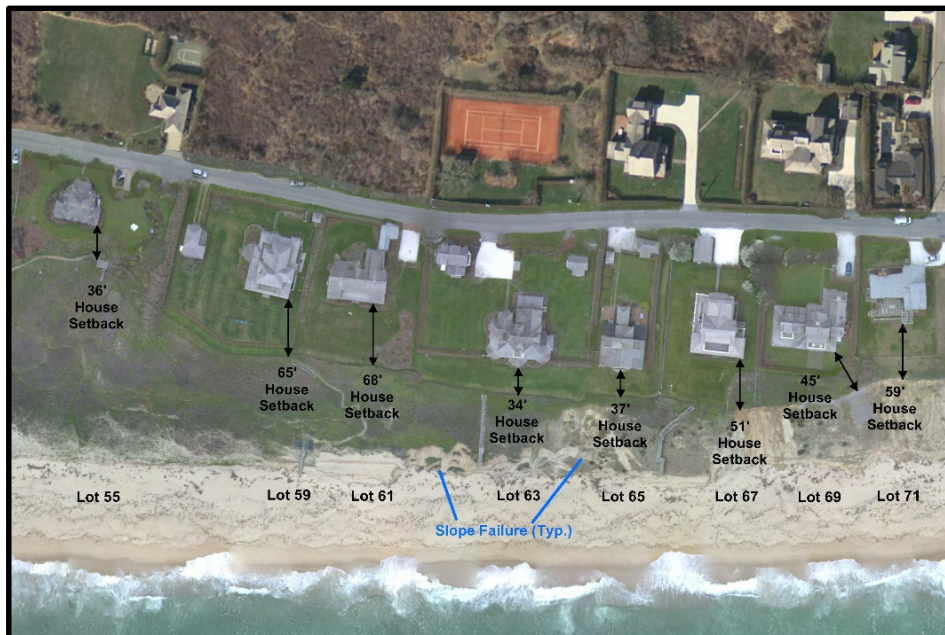
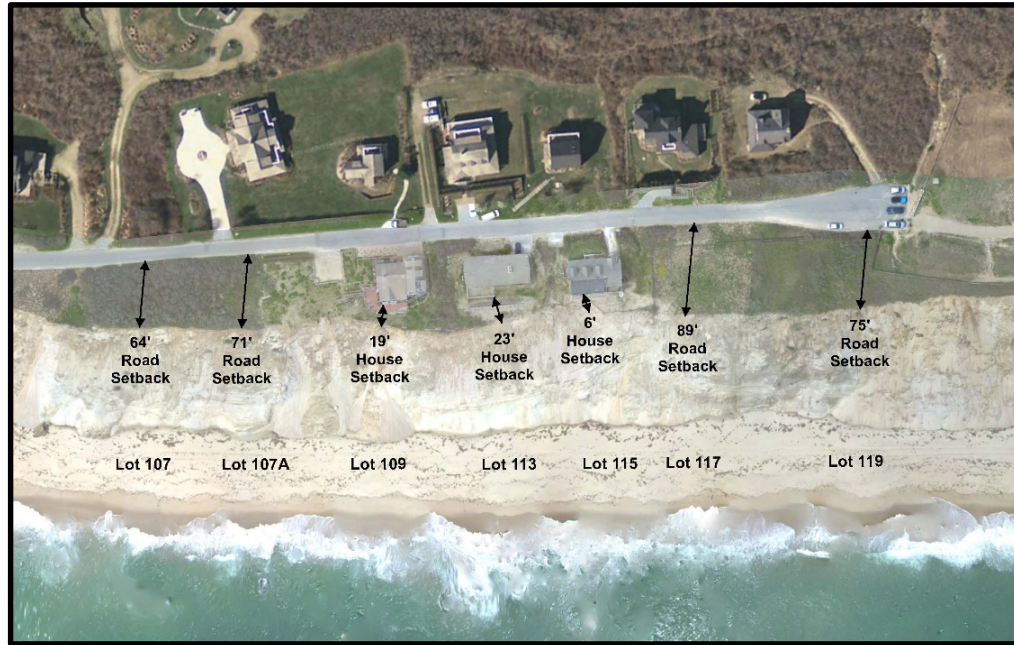
Continuation of Existing Project

4 geotextile tube tiers with a maintained sand template to provide continuous protection from 55 to 115 Baxter Road

- 767 feet North from Existing Project to 115 Baxter Road
- 1,916 feet South from Existing Project to 55 Baxter Road
- Total Length of Expanded Project = 2,683 feet (includes returns)



Purpose & Need



Purpose & Need

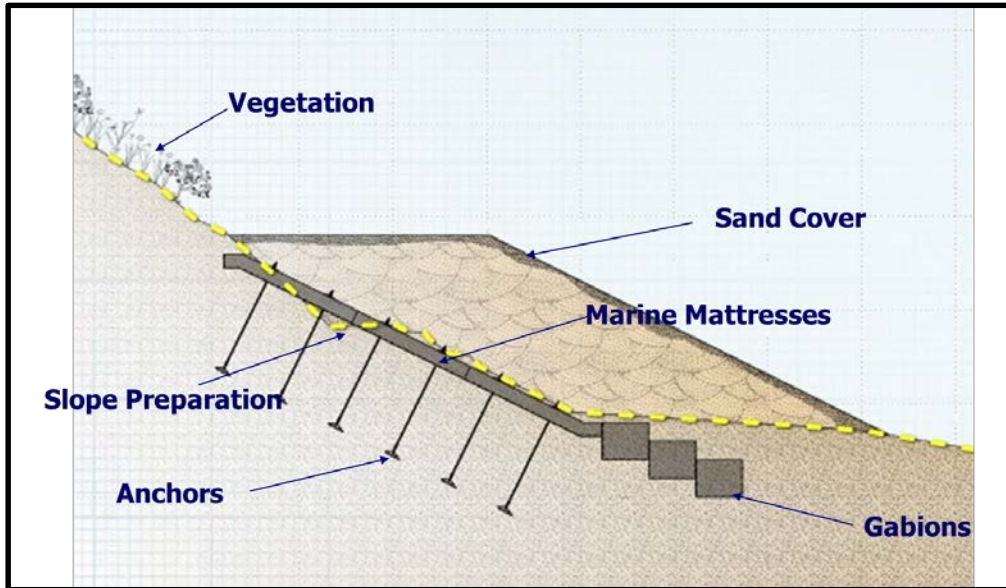


View of 115 Baxter Road facing south. Note steep un-vegetated slope fronting this house

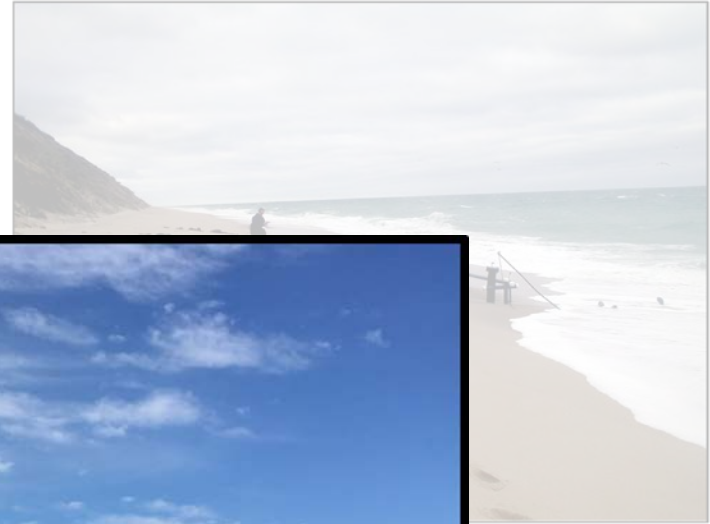


View of 109 Baxter Road facing north. Note the nearly vertical slope fronting this house.

Alternatives



Selected Alternative



Construction Overview

1. Construction equipment beach access via Hoick's Hollow
2. Excavate trench for lowest geotube tier to -3.0 ft MLW; stockpile on seaward side (ACOE permit application filed)
3. Scour apron with anchor tube rolled out in trench, with lowest geotube tier on top
4. Lowest geotube tier inflated and concrete plugs will seal ports
5. Each section of lowest tier geotubes will overlap adjacent tubes
6. Anchor tube filled, then trench filled in on landward side
7. Bench on tier 1 will be created, prior to tier 2 install
8. Water source trench excavated/maintained seaward of bottom tier for slurry

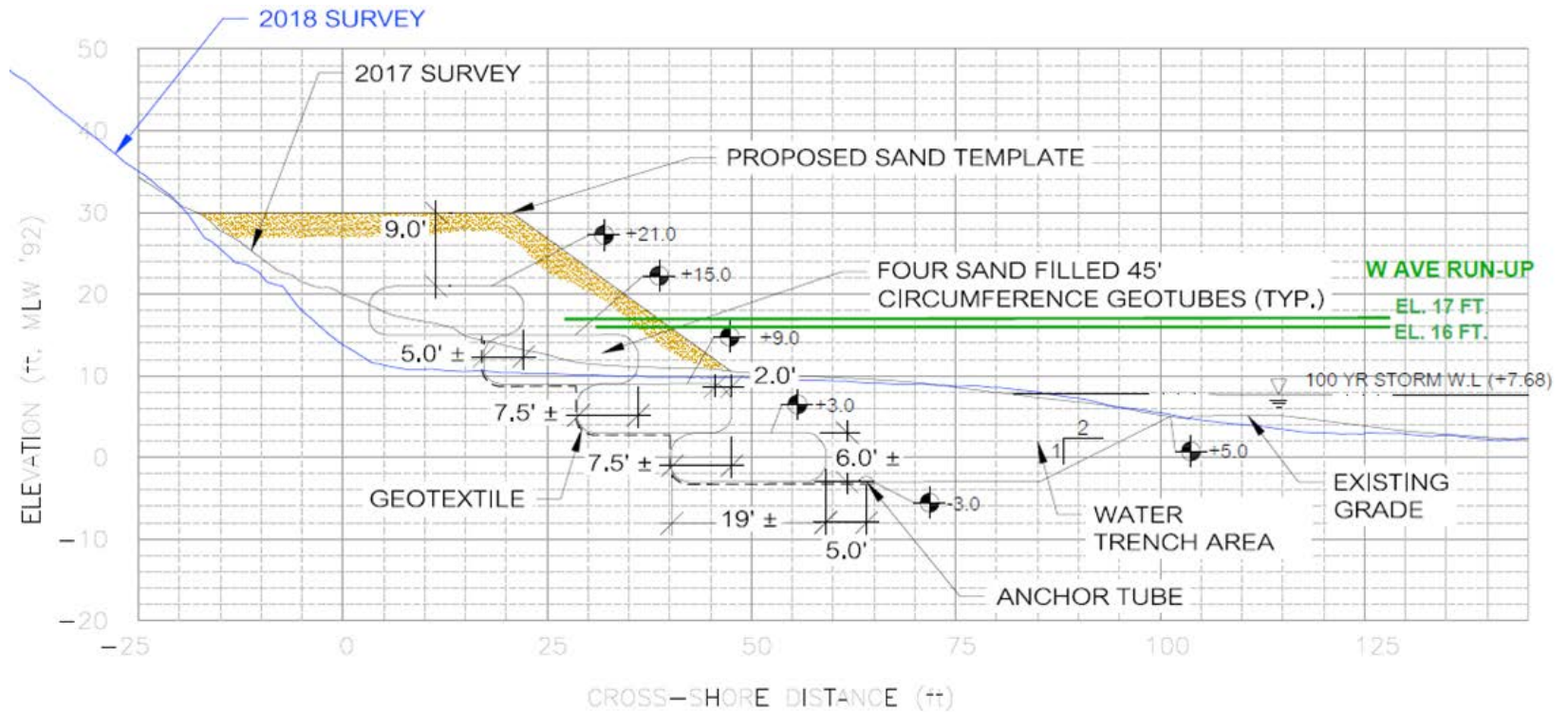


Construction Overview (cont.)

9. Fill tier 2 geotubes
10. Tier 3 geotubes overlap with tier 2 geotube layer and filled with sand slurry. Water source obtained by trench seaward of tier 3 geotubes
11. Bench landward of tier 3 will match top of filled tier 3 geotube. Scour apron laid on top of third tube
12. Tier 4 geotube placed and filled same as tier 3 geotubes
13. Install returns by excavating initial trench for lowest tiers and filling all tiers using slurry system
14. Once all geotubes are filled, entire structure will be covered with sand



Comparison of Projects



Comparison of Projects

Project Element	Existing Project	Expanded Project
Project Purpose:	+/- 950 feet to protect 2 homes and public infrastructure (fronting 5 vacant lots to protect public infrastructure; gap lots from a pre-1978 house perspective).	+/- 2,683 feet to protect 17 pre-1978 homes and across 2 vacant lots (to protect public infrastructure) or “gap lots” to provide a contiguous geotube system.
Geotube System Design:		
<i>Geotube Layout</i>	Four tier geotube configuration covered by sand template.	Same design. Difference is lowest geotube set at elevation -3 feet MLW instead of 0 feet MLW
<i>Geotube Returns</i>	Sloped returns that tie into adjacent Coastal Bank at a shallow angle.	Same design.
<i>Return Extensions</i>	Coir rolls approved November 28, 2018.	Add Special Condition to install coir roll return extensions when appropriate.
Sand Template Management:	Place sand on template at a rate of 22 cy/lf/yr and use that sand stockpile to recover exposed tubes after erosion events. Import sand during storm season as needed to replenish stockpile.	Fill template to 22 cy/lf before each storm season and use that sand stockpile to recover exposed tubes after erosion events. Import sand during storm season as needed to replenish stockpile. Refill template with volume of sand lost the previous storm season, or with 8.8 cy/lf, whichever is greater.
Monitoring:	<u>Extensive monitoring program:</u> <ul style="list-style-type: none"> ▪ Shoreline change quarterly; ▪ Bathymetric Survey semi-annually; ▪ underwater video semi-annually; ▪ post-storm inspections; ▪ template survey annually. 	<u>Extensive program with minor modifications²:</u> <ul style="list-style-type: none"> ▪ Shoreline change semi-annually; ▪ Bathymetric Survey annually; ▪ Underwater video once every 3 year; ▪ Post storm inspections ▪ Template survey annually
Reporting:	Annual Report and interim reports to the Commission	Same

Sand Mitigation

- Current mitigation requirement: **22 cy/lf/yr** annually
- Average annual bluff contribution volume for entire project length (Existing + Proposed Project) without the Project is calculated at 7.7-8.8 cy/lf/yr
- Conservative volume of 22 cy/lf/yr is more than double the average bluff contribution, significantly higher than other known projects
- A more **adaptive mitigation program** is proposed where the template is **refilled to 22 cy/lf/yr prior to each storm season**



Performance Standards

Coastal Bank: 310 CMR 10.30(3)

- (3) 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 or constructed pursuant to a Notice of Intent filed 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) Coastal engineering structure or modification shall be designed **so as to minimize, using best available measures, adverse effects** on adjacent or nearby coastal beaches due to changes in wave action, and
 - b) the applicant demonstrates that **no method of protecting the building other than the proposed coastal engineering structure** is feasible.
 - c) **protective planting** designed to reduce erosion may be permitted.

Performance Standards

Coastal Beach 310 CMR 10.27(3)

WHEN A COASTAL BEACH IS DETERMINED TO BE SIGNIFICANT TO STORM DAMAGE PREVENTION, FLOOD CONTROL, OR PROTECTION OF WILDLIFE HABITAT, 310 CMR 10.27(3) THROUGH (7) SHALL APPLY:

- 3) 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.

Performance Standards

MESA

**Coastal Bank 310 CMR 10.30(8)
Coastal Beach 310 CMR 10.27(7)**



MASSWILDLIFE

January 2, 2019

Nantucket Conservation Commission
2 Bathing Beach Road
Nantucket MA 02554

Siasconset Beach Preservation Fund
PO Box 2279
Nantucket MA 02554

Project Location: 55 - 122 Baxter Road
Nantucket

Project Description: Expanded Baxter Road and Sconset Bluff Storm Damage Prevention Project;
Coastal Bank Stabilization with Geotextile Bags and Nourishment
048-3115 (associated with 048-2581)

Wetlands File No.: 13-32415

NHESP Tracking No.: 13-32415

“Provided these conditions are included in any approving Orders of Conditions issued by the Conservation Commission, and the applicant complies with all the above noted conditions, the project will not result in an adverse impact to the resource area habitats of state-listed wildlife species pursuant to the WPA and will not result in a prohibited Take pursuant to the MESA.”



MASSWILDLIFE

February 11, 2019

Nantucket Conservation Commission
2 Bathing Beach Road
Nantucket MA 02554

Siasconset Beach Preservation Fund
PO Box 2279
Nantucket MA 02554

Project Location: 55 - 122 Baxter Road
Nantucket

Project Description: Expanded Baxter Road and Sconset Bluff Storm Damage Prevention Project;
Coastal Bank Stabilization with Geotextile Bags and Nourishment
048-3115 (associated with 048-2581)

Wetlands File No.: 13-32415

NHESP Tracking No.: 13-32415

Conclusion

The Existing Geotube Project is protecting Sconset Bluff from erosion with no adverse effects to adjacent Beaches. The Expanded Project is expected to perform likewise with no adverse effects to adjacent Beaches.

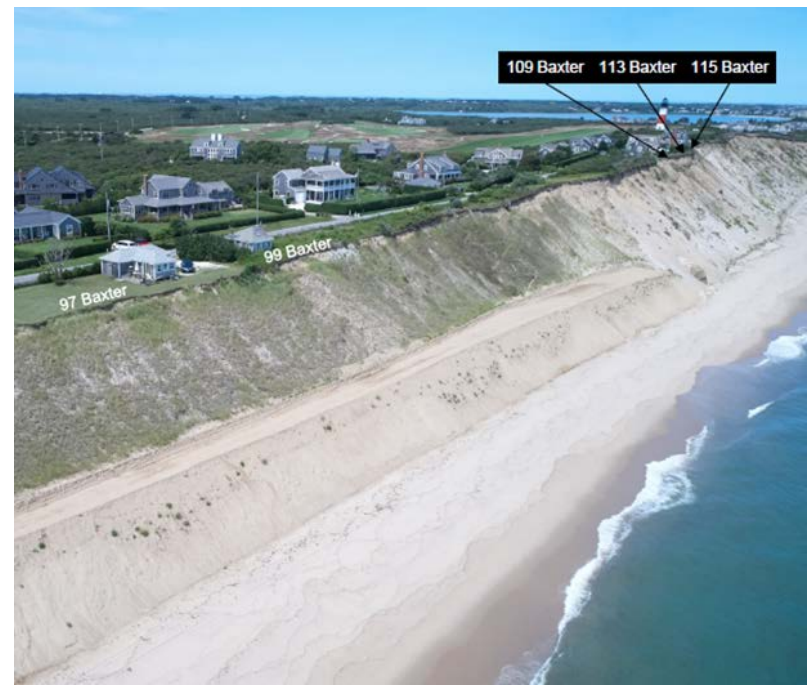
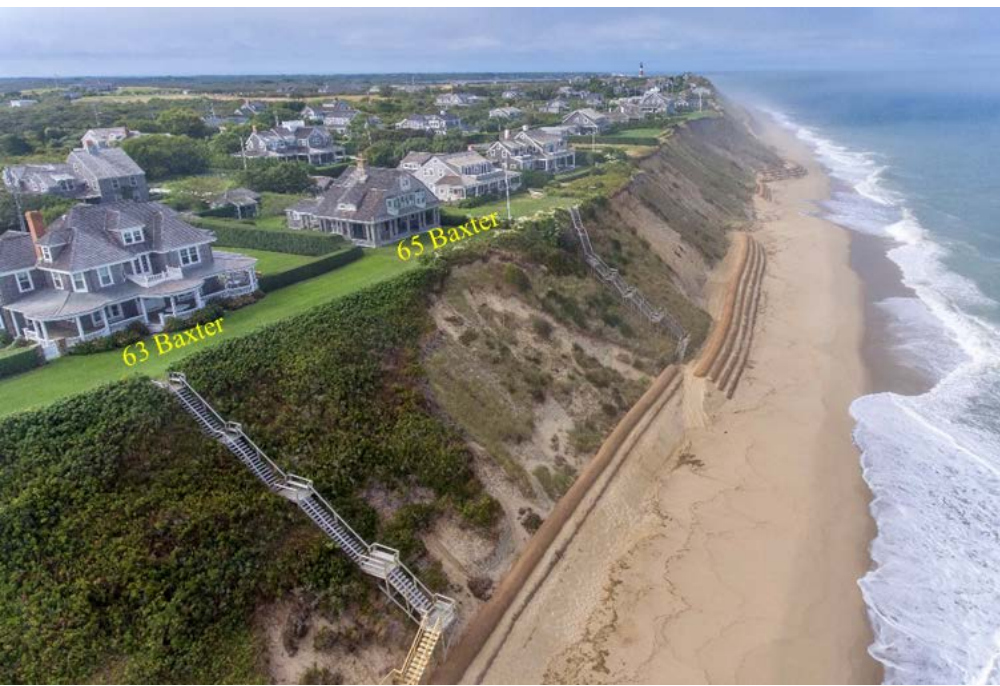
Profile	Starting Date & Position (ft)	Ending Date & Position (ft)	Total Change (ft)	Annualize Rate of Change (ft/yr)
92.1*	10/2014 / -1.7	12/2018 / +5.9	7.6 ft Accretion	1.79 ft /yr Accretion
92**	10/2014 / -55.7	12/2018 / -58.8	3.1 ft Retreat	0.73 ft /yr Retreat
91.9	10/2014 / +5.7	12/2018 / +5.9	0.2 ft Accretion	0.05 ft/yr Accretion
91.5	10/2014 / -66.9	12/2018 / -72.7	5.8 ft Retreat	1.36 ft/yr Retreat
91.35	10/2014 / 0.0	12/2018 / +6.5	6.5 ft Accretion	1.53 ft/yr Accretion
91.2	10/2014 / -1.0	12/2018 / +7.0	8 ft Accretion	1.88 ft/yr Accretion
91	10/2014 / -97.9	12/2018 / -102.6	4.7 ft Accretion	1.11 ft/yr Accretion
90.95	10/2014 / -0.2	12/2018 / +3.6	3.8 ft Accretion	0.89 ft/yr Accretion
90.85***	10/2014 / -2.1	12/2018 / +5.7	7.8 ft Accretion	1.84 ft / yr Accretion
90.8****	10/2014 / -1.3	12/2018 / +3.1	4.4 ft Accretion	1.04 ft/yr Accretion

* 200 feet north of Existing Project

** 100 feet north of Existing Project

*** 200 feet south of Existing Project

**** 300 feet south of Existing Project



Questions