Town and County of Nantucket
Select Board • County Commissioners

Jason Bridges, Chair
Matt Fee
Dawn E. Hill Holdgate
Brooke Mohr
Melissa Murphy

16 Broad Street
Nantucket, Massachusetts 02554

Telephone (508) 228-7255
Facsimile (508) 228-7272
www.nantucket-ma.gov

C. Elizabeth Gibson
Town & County Manager

AGENDA FOR THE MEETING OF THE
SELECT BOARD
NOVEMBER 9, 2022 – 5:30 PM
PSF COMMUNITY ROOM, 4 FAIRGROUNDS ROAD
AND REMOTE PARTICIPATION VIA ZOOM WEBINAR
NANTUCKET, MASSACHUSETTS
****AMENDED NOVEMBER 7, 2022****

YOU TUBE LINK FOR VIEWING ONLY:
https://youtu.be/y17qJJLqOzY

ZOOM WEBINAR REGISTRATION LINK TO VIRTUALLY ATTEND MEETING:
https://us06web.zoom.us/webinar/register/WN_PIXisbmYQyK3a9YJViHpBQ

I. CALL TO ORDER

II. SELECT BOARD ACCEPTANCE OF AGENDA

III. SHORT-TERM RENTAL WORK GROUP FACILITATOR UPDATE

IV. ANNOUNCEMENTS

1. The Select Board Meeting is Being Audio/Video Recorded.

2. Sewer Force Main Project Update.

3. Veterans' Day Observance Ceremony to be Held Friday, November 11, 2022 at 10:30 AM at Federal Street War Memorial Adjacent to Town Building; Refreshments to follow American Legion Hall, 21 Washington Street.

4. Town Offices Closed Friday, November 11, 2022 in Observance of Veterans' Day.

5. Saturday, May 6, 2023 Annual Town Meeting:
- Warrant Open for Citizen Warrant Article Submittals through November 14, 2022 at 4:00 PM.

6. Committee Vacancies: Zoning Board of Appeals; Harbor Plan Update Committee; Agricultural Commission; Tree Advisory Committee; Deadline is November 10, 2022 at 12:00 PM.

7. Select Board Announcements/Comments.

V. FOLLOW-UP ON COMMENTS FROM PRIOR SELECT BOARD MEETINGS

*VI. PUBLIC COMMENT**

*VII. NEW BUSINESS**

VIII. APPROVAL OF MINUTES AND WARRANTS

1. Approval of Minutes of November 2, 2022 at 5:30 PM.

2. Approval of Treasury Warrants for November 2, 2022.

IX. CITIZEN/DEPARTMENTAL/COMMITTEE REQUESTS

1. Robert B. Our Co., Inc.: Request for Waiver of Town Noise Bylaw for Surfside Road Sewer Improvements Project (Surfside Road from Miacomet Avenue to Vesper Lane) from November 14, 2022 to December 30, 2022, 4:00 PM to 2:00 AM, Monday through Thursday Nights.

2. Coastal Resilience Advisory Committee: Quarterly Report.

3. **Request for Consent and Finding of No Conflict for HallKeen Request to Allow Klein Hornig's Washington Office to Advise them Regarding HUD-Compliance Issues at Two of its Operating Properties While Representing the Town of Nantucket Regarding Ticcoma Green.**

X. TOWN MANAGER'S REPORT

1. Request for Select Board Approval of Notice of Intent to Conservation Commission in Connection with Sconset Beach Erosion Control Project.

2. Review of Proposed 2023 Select Board Meeting Schedule.

XI. SELECT BOARD'S REPORTS/COMMENT

1. Review/Adoption of Proposed Transportation and Parking Advisory Committee Structure and Mission (continued from November 2, 2022).

2. Committee Reports.

XII. ADJOURNMENT

**Identified on Agenda Protocol Sheet*

SELECT BOARD AGENDA PROTOCOL:

Roberts Rules: The Select Board follows Roberts Rules of Order to govern its meetings as per the Town Code Charter.

Public Comment: Public Comment is to bring matters of public interest to the attention of the Board. The Board welcomes concise statements on matters that are within the purview of the Select Board. At the Board's discretion, matters raised under Public Comment may be directed to Town Administration or may be placed on a future agenda, allowing all viewpoints to be represented before the Board takes action, if any. Except in emergencies, the Board will not normally take any other action on Public Comment in its sole discretion.

To facilitate that any individual who wishes to provide Public Comment has the opportunity and to ensure the ability of the Board to conduct its business in an orderly fashion, the following rules and procedures are adopted consistent with state and federal free speech laws:

- The agenda for regular Select Board meetings will include a Public Comment period at the beginning of the meeting unless there is more urgent business for the Board to take up first. This time is reserved for speakers to address the Board on matters that are not related to any other Agenda item. If a speaker wishes to address the Board on a matter that is related to another Agenda item, the Chair will accept public comment when that Agenda item is reached during the meeting.

- All speakers are encouraged to present their remarks in a respectful manner.

- All remarks will be addressed through the Chair of the meeting.

- The Chair of the meeting may not interrupt speakers who have been recognized to speak, except that the Chair reserves the right to terminate speech which is not constitutionally protected because it constitutes true threats, incitement to imminent lawless conduct, comments that were found by a court of law to be defamatory, and/or sexually explicit comments made to appeal to prurient interests. Verbal comments may also be curtailed if they exceed three (3) minutes and to the extent they exceed the scope of the Board's authority.

Disclaimer: Public Comment is not a time for debate or response to comments by the Board. Comments made during the Public Comment period do not reflect the views or positions of the Board. Because of constitutional free speech principles, the Board does not have authority to prevent all speech that may be upsetting and/or offensive made during the Public Comment period.

New Business: For topics not reasonably anticipated by the Chair 48 hours in advance of the meeting may be brought up for discussion in accordance with the Open Meeting Law.

Public Participation: The Board welcomes valuable input from the public at appropriate times during the meeting with recognition from the Chair at his/her sole discretion. For appropriate agenda items, the Chair will introduce the item and take public input. Individual Board Members may have questions on the clarity of the information presented. The Board will hear any staff input and then deliberate on a course of action.

Select Board Report and Comment: Individual Board Members may have matters to bring to the attention of the Board during a meeting. If the matter contemplates action by the Board, Board Members will consult with the Chair and/or Town Manager in advance and provide any needed information by the Thursday before the meeting and/or schedule the matter for a future Board meeting. Otherwise, except in emergencies, the Board will not normally take action on Select Board Comment.

Approved on February 17, 2021



Nantucket Short Term Rentals Work Group

Update to Select Board:

November 9, 2022

- Updates on Work to Date
- Key Questions for the Select Board
- Upcoming

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Updates

- Three 3-4 hour by-weekly meetings so far
- *Full attendance of primary members
- Focused on the following:
  - Identifying and refining policy goals
  - Identifying and responding to information needs
  - Setting internal ground rules
  - Clarifying initial policy options

* At first two meetings

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Policy Goals

- Visions of Success Brainstormed – Oct 11
- Draft Policy Goals refined – Oct 25

Policy Goals will be iterative – group will continue to tweak and refine

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CATALYZING COLLABORATION

Draft STRWG Policy Goals

- Propose clear & enforceable policies to regulate Short Term Rentals for Nantucket that help to:
  - Preserve Nantucket's unique character and traditions, neighborhoods, sense of community, and quality of life
  - Increase, or prevent or reverse the loss of, available year-round housing
  - Reduce or prevent increase in year-round rental and purchase costs
  - Reduce or prevent increase in traffic, congestion, overcrowding, and strains on civic and environmental infrastructure
  - Avoid noise, nuisance, and other "bad neighbor" behaviors
  - Protect residents' (year-round and part-time) interests/needs for rental income and flexibility
  - Ensure benefits of and avoid harms to the tourism economy for the people of Nantucket
  - Preserve tax and fee income for the municipal budget and other Nantucket priorities

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Information Needs

- Brainstorm of key data questions – Oct 11
- Subgroup to discuss data questions with Granicus – Oct 18
- Presentation by Granicus of policy framework and initial STR data – Oct 25
- Subgroup to discuss legal questions with KP Law – Oct 28
- Presentation by KP Law of answers to legal questions – Nov 8
- Presentation of Zoning 101 – Nov 8

Upcoming: Granicus working on collecting and synthesizing STR data

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Operating Protocols

- Draft Protocols presented and discussed – Oct 11
- Revised Protocols discussed and approved – Oct 25

Operating Protocols are a voluntary agreement among members. They cannot be legally imposed, but 8 of the 9 members have agreed to follow them.

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Clarifying Initial Policy Options

- Presentation by Granicus to clarify initial range of STR policy components – Nov 8

Upcoming:

- STRWG with Granicus to explore and evaluate the pros and cons of potential policy components for meeting the various policy goals, and build draft packages of approaches to meet these goals

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Key Questions for the Select Board

- Final Deadlines for STRWG to submit warrant articles for 2023 TM
  - For Zoning By-law
  - For General By-laws
- Potential for Special Town Meeting, if necessary?
- Others? (to be identified at Nov 8 meeting)

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Upcoming

- Continue by-weekly virtual meetings - (Tuesdays 5-8)
- Consider a longer in-person/hybrid meeting after Thanksgiving to work through potential options/packages
- Consider a virtual public meeting week of December 12 focused on evaluation of possible approaches

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FOR GOD AND COUNTRY

THE AMERICAN LEGION

BYRON L. SYLVARO POST NO. 82
P.O. BOX 265
NANTUCKET, MA 02554

RECEIVED
OCT 21 2022
NANTUCKET TOWN ADMINISTRATION

October 20, 2022

The Town of Nantucket
Select Board
16 Broad St.
Nantucket, MA 02554

Greetings from The American Legion Byron L. Sylvaro Post #82. We are honored to request your participation in the annual Veretans' Day Program on Friday, November 11, 2022 starting at 10:30 a.m. at the Town Memorial on Federal Street. If you wish, you can gather with us early between 9:30 and 10:00 at The American Legion Hall, 21 Washington St. and walk over with us.

Following the program, you are invited to come back with us to the American Legion Post for refreshments.

With best regards,

Neville J. Richen, Commander

Select Board
2022 Committee Vacancy Appointments Timeline
As of 10/24/2022

October 24 – Advertise committee vacancies on Town's website

October 26 and November 2 – Committee vacancies to be added to Select Board agendas as announcement

October 27 and November 3 – Advertise committee vacancies in the Inky

November 10 at 12:00 PM – Deadline for submitting applications for the following committee vacancies:

- Zoning Board of Appeals – one seat, term expires 2024
- Harbor Plan Update Committee – three at-large seats, terms end upon completion of work
- Agricultural Commission – two seats, terms expire 2023
- Tree Advisory Committee – two seats, terms expire 2025

November 16 and November 30 – The names of applicants who have submitted applications will be read aloud and applications will be included in the Board's packet.

December 7 – Meeting for applicants to introduce themselves and review their applications; committee appointments made.

NOTICE OF COMMITTEE VACANCIES
(as of 10/24/2022)

Applications are being accepted by the Select Board to fill a vacancy on the following committee:

- **Zoning Board of Appeals – one seat, term expires 2024**

Interested individuals may obtain a "Committee Interest Form" by clicking here. Information on the responsibilities of the ZBA may be obtained from the Town's website at https://www.nantucket-ma.gov/287/Zoning-Board-of-Appeals. Completed applications can be mailed or hand delivered to Town Administration, 16 Broad Street, Nantucket, MA 02554 or emailed to emooney@nantucket-ma.gov.

Applications must be submitted by **12:00 PM** on **Thursday, November 10, 2022**, for a Select Board meeting on **Wednesday, December 7, 2022** where applicants can introduce themselves and review their applications, and an appointment will be made.

Applications are being accepted by the Select Board to fill seats on the newly established committee:

- **Harbor Plan Update Committee – three (3) at-large seats**

Interested individuals may obtain a "Committee Interest Form" by clicking here. Information on the responsibilities of the ZBA may be obtained from the Town's website at https://nantucket-ma.gov/2604/Nantucket-and-Madaket-Harbors-Action-Pla. Completed applications can be mailed or hand delivered to Town Administration, 16 Broad Street, Nantucket, MA 02554 or emailed to emooney@nantucket-ma.gov.

Applications must be submitted by **12:00 PM** on **Thursday, November 10, 2022**, for a Select Board meeting on **Wednesday, December 7, 2022** where applicants can introduce themselves and review their applications, and appointments will be made.

Applications are being accepted by the Select Board to fill vacancies on the following committees:

- Agricultural Commission – two seats, terms expire 2023
- Tree Advisory Committee – two seats, terms expire 2025

Interested individuals may obtain a "Committee Interest Form" by clicking here. Information on the responsibilities of the various committees may be obtained from the Town's website at https://www.nantucket-ma.gov/196/Agricultural-Commission and https://www.nantucket-ma.gov/458/Tree-Advisory-Committee. Completed applications

can be mailed or hand delivered to Town Administration, 16 Broad Street, Nantucket, MA 02554 or emailed to emooney@nantucket-ma.gov.

Applications must be submitted by **12:00 PM** on **Thursday, November 10, 2022**, for a Select Board meeting on **Wednesday, December 7, 2022** where applicants can introduce themselves and review their applications, and appointments will be made.

NANTUCKET SELECT BOARD

Policy Statement and Procedures for Appointments to Committees, Commissions, Boards
Adopted: May 19, 2021

BASIC GOAL

To encourage active citizen participation and involvement in local government affairs by encouraging local residents with expertise, skills, interest, and energy to seek appointment to the Town's Committees, Boards and Commissions. And, to expand the Town's outreach to its citizens to ensure that we engage as many diverse perspectives as possible to build and encourage awareness, understanding and appreciation through a lens of diversity, equity and inclusion.

POLICIES IN SUPPORT OF THE BASIC GOAL

A. The Town will maintain a recruiting system, known as the Volunteer Talent Bank (Talent Bank), to find and appoint interested local residents who are best qualified by education, training and experience to contribute effectively to the work of the committee, commission or board. To the extent practical, the Select Board shall announce its intention to meet candidates for appointment and allow them to introduce themselves and review their applications no less than two weeks in advance of appointments.

B. When an announcement is made by the Board regarding any vacancies, the Board will require that applicants file a Committee Appointment application. Following a public meeting with the applicant(s) at which the Board may ask questions, and/or the applicant may ask questions, a candidate shall be selected in accordance with the following procedure:

RECOMMENDED VOTING PROCEDURES FOR ANNUAL APPOINTMENTS

1. The Board reviews a list of openings for annual appointments with a committee appointment timeline in early April.

2. In mid-April, members of committees, commissions, boards whose terms are expiring are notified and asked if they would like to apply for reappointment. Incumbent Committee Interest Forms are mailed to all of these members and they are asked to respond in writing to indicate if they request re-appointment, or not. Incumbents need to meet the same deadlines as listed on the committee appointment timeline.

3. Annual committee openings are advertised in the local newspaper for four weeks, as well as on the Town website. Additionally, the openings are announced at the Board's weekly meetings starting in mid-April through the end of May.

4. Applications will be accepted only by the deadlines outlined in the annual Committee Appointments Timeline for all committees, commission and boards.

5. The Select Board holds two meetings to allow applicants to address the Board and review their applications.

6. Committee appointments are made at the last Select Board meeting of June, which date shall be at least one week after the names and applications of all applicants have been made public.

    a. At this meeting, the Select Board may appoint, by majority vote, a candidate to fill any seat. Or, the Select Board, at its discretion, may elect to use a paper ballot voting procedure, or vote by e-mail if the Select Board meeting is held virtually.

    b. The Chair shall ask Board members to submit their written choices for appointment (or to e-mail their choices for appointment to Town Administration in real time if meeting virtually). Each Board member writes their own name on a slip of paper, and then writes down their vote for the applicant(s) and passes their paper ballot directly to the Chair without other members viewing the ballot.

    c. The Chair reads the paper ballot votes and notes which Board member cast the votes. If meeting virtually, Town Administration staff will read the results into the record, and after announcing how each Board member votes, staff will ask that Board members verbally confirm their votes.

    d. The candidate(s) with the majority of votes will be appointed.

    e. Any committee seats not filled will continue to be posted on the Town website and routinely advertised as vacant.

At its discretion, the Select Board may appoint a candidate to any Commission, Committee or Board even if the candidate is not present for the meeting.

RECOMMENDED VOTING PROCEDURES FOR VACANCIES THROUGHOUT THE YEAR

The Board's intent to fill vacancies will be noted on its regular meeting agenda for at least two weeks and applications of prospective candidates will be included in the Board's agenda packet to allow the Board and the public to review the prospective candidates' credentials. The vacancy will also be advertised in the Inquirer & Mirror for a minimum of two weeks as well as on the Town's website. Applications will be accepted only by a certain deadline for all committees, commission and boards.

1. Immediately following a meeting with candidates for appointment, the Select Board may appoint, by majority vote, a candidate to fill any vacancy. Or, the Select Board, at its discretion, may elect to use a paper ballot voting procedure, or vote by e-mail if the Select Board meeting is held virtually.

2. Immediately following a meeting with candidates for appointment, the Chair shall ask

Board members to submit their written choices for appointment (or to e-mail their choices for appointment to Town Administration in real time if meeting virtually). Each Board member writes their own name on a slip of paper, and then writes down their vote for the applicant(s) and passes their paper ballot directly to the Chair without other members viewing the ballot.

3. The Chair reads the paper ballot votes and notes which Board member cast the votes. If meeting virtually, Town Administration staff will read the results into the record, and after announcing how each Board member votes, staff will ask that Board members verbally confirm their votes.

4. The candidate(s) with the majority of votes will be appointed.

At its discretion, the Select Board may appoint a candidate to any Commission, Committee or Board even if the candidate is not present for the meeting.

ADMINISTRATION OF THE VOLUNTEER TALENT BANK

The Town Administration office shall be responsible for the Talent Bank data and all administrative materials, records and processes.

PUBLIC INPUT REGARDING CANDIDATES FOR APPOINTMENT

Any citizen may convey their support or objection of an individual’s appointment/ reappointment through written notice to the Town Manager's Office. Town Administration shall forward any written comments concerning appointments/reappointments to the Select Board and to the person cited.

This policy may be amended by the Select Board at any time.

Agenda Item Summary

Agenda Item #	IX. 1.
Date	11/9/2022

Staff

Erika D. Mooney, Operations Administrator

Subject

Robert B. Our Co., Inc. (RBO) Request for Waiver of Town Noise Bylaw

Executive Summary

RBO, the Town's contractor on the Surfside Road Sewer System Improvements Project, which includes a new Surfside Road Pump Station at 53 Surfside Road, is requesting a waiver of the Town Noise Bylaw from 4:00 PM to 2:00 AM, Monday through Thursday nights from November 14, 2022 to December 30, 2022. Work will not be ongoing the entire requested time; it will provide a window for RBO to complete the work for final connections to the Pump station. Most of this project has occurred at night to accommodate the Nantucket Public schools and the heavy traffic along Surfside Road.

Staff Recommendation

Approve the Noise Bylaw Waiver as requested.

Background/Discussion

N/A

Impact: Environmental ☐ Fiscal ☐ Community☒ Other☐

Board/Commission Recommendation

N/A

Public Outreach

Abutter notification to affected areas will occur prior to the work being done.

Connection to Existing Applicable Plan (i.e., Strategic Plan, Master Plan, etc.)

N/A

Attachments

Waiver request from RBO

November 4, 2022

Ms. Erika Mooney

Operations Manager

Town Of Nantucket

16 Broad Street

Nantucket MA 02554

RE: Request to work on Surfside Road Night 4 PM – 2 AM

Dear Ms Mooney

The Robert B. Our Company respectfully requests permission to work on Surfside Road nights from 4 PM – 2 AM . We are requesting permission for night work , from **November 14 , 2022 – December 30,2022**.

While we will not be working the entire duration , The time frame requested will give us a window to complete the work required to do the final connections to the pump station.

Sincerely,

Abigail O. Rose

Abigail Rose

Project Manager

24 Great Western Road, P.O. Box 1539, Harwich, MA 02645 Tel: 508-432-0530 Fax: 508-432-7057 Web: robertbour.com

Agenda Item Summary

Agenda Item #	IX. 2.
Date	11/9/2022

Staff

Vincent Murphy, Coastal Resilience Coordinator

Subject

Coastal Resilience Advisory Committee Quarterly report – July to September 2022.

Executive Summary

This is the third quarterly reports from the Coastal Resilience Advisory Committee. The purpose of the quarterly reports is to provide a brief summery to the Select Board on quarterly activities of the Coastal Resilience Advisory Committee and on activities on Coastal Resilience Plan implementation efforts. It is also hoped to provide a regular platform for SB & CRAC to communicate and assist each other with coastal resilience direction.

Staff Recommendation

N/A

Background/Discussion

N/A

Impact: Environmental ☒ Fiscal ☐ Community☒ Other☐

Board/Commission Recommendation

The CRAC requests that the Select Board expand the Environmental Goal of the Strategic plan to include implementation of the 40 recommendations of the CRP in the next ten years as a specific goal.

Public Outreach

Overview & highlights of CRAC meetings from July to September 2022.

Connection to Existing Applicable Plan (i.e., Strategic Plan, Master Plan, etc.)

Implementation of the Coastal Resilience Plan.

Attachments

Quarterly report attached.







Quarterly report from the Coastal Resilience Advisory Committee (CRAC) to the Select Board for July to September 2022.

HIGHLIGHTS FROM THE QUARTER:

- On August 9, CRAC invited major downtown harbor property holders to discuss their coastal resilience planning efforts. Participants were Harbormaster Sheila Lucey; Emily Kilvert, Chair of the Rising Sea Level Committee at the Nantucket Yacht Club; Stephen Creese, General Manager of the Great Harbor Yacht Club; and Carolina Magina, Sustainability Manager for New England Development, owners of the Nantucket Boat Basin. With these relationships, CRAC can work to integrate the CRP and best practices for sea level rise with large downtown landowners.

- A proclamation was submitted jointly with ACKlimate to the Select Board, which approved declaring September 2022 as Climate Change Awareness Month for the third consecutive year.

COASTAL RESILIENCE PLAN (CRP) ACTIVITIES:

CRAC continued discussion on **Recommendation 1-14 Update Locally-adopted Sea Level Rise Scenarios and Best Available Flood Hazard Data** and requested additional information from Mass Dept of Transportation regarding public availability of the Massachusetts Coastal Flood Risk Model (MC-FRM) data. The Natural Resources Department has worked with Planning and Land Use Services to have the MC-FRM added to the Town GIS system, and four new layers representing sea level rise scenarios for 2030, 2050, 2070, and 2100 will be available in the near future. Once this is in place and freely available, CRAC plans to conclude the update and recommendation for approval by the Select Board.

CRAC has reviewed all of the Priority 1 projects from the CRP and the "Just do it" list from the March Design Thinking Workshop in an effort to select projects to push forward. General consensus was that elements of **Recommendation 3-4 Madaket Erosion Management and Pilot Project and Ames Avenue Bridge Protection** should go forward as a priority.

OTHER BUSINESS

Prompted by the Conservation Commission, which sent a letter on the subject to Mass DEP on August 11, CRAC has discussed issues surrounding public beach access and passage along the beach in the intertidal zone, as it relates to Coastal Engineering Structures. CRAC has had considerable discussion to understand this issue and is drafting a letter which it expects will be forthcoming in this quarter (Q4) with a recommendation that the Select Board send it to Massachusetts Department of Environmental Protection regarding better understanding the DEP's approach to ensuring public access to the intertidal zone.

Rachael Freeman, Land Bank Representative to CRAC gave an update on Land Bank coastal resilience plans on August 23. The majority of the presentation focused on the Washington Street area and developing plans to make the waterfront area more resilient to flooding and increase recreational use of the area.

CRAC reviewed the Falmouth Surf Drive resilience plan to understand how other communities prioritize resilience and how choices are made in coastal flood zones.

GRANT APPLICATIONS:
CRAC was involved in several grant applications with and through the Natural Resources Department and also with other island groups:

- A grant application for a feasibility study and public outreach regarding under the CRP Recommendation **2-6 Downtown Neighborhood Flood Barrier - Phase 1 Project** was submitted to the Mass Office of Coastal Zone Management (CZM).
    - On September 16, notice was received that the grant application was unsuccessful.

- Natural Resources Department had received a Southeast New England Program FEMA Zone Grant for $158,465.00 for resiliency work in Sesachacha Pond. The CRAC had submitted a letter of support for their proposed oyster reef and land grading project. Part of CRP Recommendation **4-2 Polpis Road Raising, Culvert Expansion, and Wave Attenuation at Sesachacha Pond.**

Requests & Recommendations:

- Are there current or upcoming issues for which the Select Board would like the CRAC's advice?
- The CRAC requests that the Select Board expand the Environmental Goal of the Strategic plan to include implementation of the 40 recommendations of the CRP in the next ten years as a specific goal.

Agenda Item Summary

Agenda Item #	IX. 3.
Date	11/9/2022

Staff

Tucker Holland, Housing Director

Subject

Klein Hornig Engagement and Finding of No Conflict with Regard to HallKeen Request to Allow Klein Hornig's Washington Office to Advise Them Regarding HUD-Compliance Issues At Two of Their Operating Properties While Still Representing The Town Regarding Ticcoma Green

Executive Summary

HallKeen is asking that the Board give its consent and waiver with regard to potential conflicts of interest in allowing Klein Hornig's Washington Office to advise them on HUD-compliance issues regarding two of their operating properties. As the Board is aware, Klein Hornig's Boston Office represents the Town with respect to Ticcoma Green alongside Town Counsel.

Staff Recommendation

Based on the representations from Klein Hornig and HallKeen and the advice of Town Counsel, the recommendation is to give its consent and waiver for this narrow purpose.

Background/Discussion

From: Joseph Lieber <jlieber@kleinhornig.com>
Date: October 31, 2022 at 4:34:40 PM EDT
To: Tucker Holland <tholland@nantucket-ma.gov>
Subject: KH engagement - potential conflict of interest issue

"Hi Tucker – our engagement letter addresses conflict issues in general but a new and specific potential conflict has arisen which I need to float with you. HallKeen has reached out to one of my colleagues in our Washington DC office to assist them with HUD compliance issues at two of their operating properties (obviously not Ticcoma Green, which doesn't exist yet). Before my firm can accept HK as a client we would need your consent and agreement to waive the potential conflicts of interest posed by that representation. I want to assure you that neither Becca nor I will have any role in the proposed representation of HK, our colleague who would take on that work won't have any role in the Ticcoma Green project, and that representation won't have anything to do with HK's proposed Nantucket project. We will all honor the tenets of client confidentiality and zealous representation. Please let me know your thoughts. You are fully within your rights to decline to agree to this but I hope you will conclude that this

conflict of interest is more theoretical than real. In any event feel free to reach out to discuss this with me if you want to do that. Thank you, Joe"

Klein Hornig LLP

JOSEPH LIEBER | 101 Arch Street, Suite 1101 | Boston MA 02110

D 617 224 0605 | **T** 617 224 0600 | **F** 617 224 0601 | jlieber@kleinhornig.com | www.kleinhornig.com

From HallKeen:

"This is a really critical issue for us as we are trying to close another project in New Bedford that requires their unique expertise and this is the last pre-closing item."

Mark Hess, *Chief Operating Officer, Acquisitions & Development*
Principal

HK | HallKeen Management
Real Estate Management and Investment
1400 Providence Highway, Suite #1000
Norwood MA 02062
Direct: 781.915.3022| mhess@hallkeen.com

From Town Counsel:

Doesn't consider this an issue really because of the professional standards that Klein Hornig has to follow, coupled with the nature of the work as outlined. He notes the SB will have to vote to grant consent.

[John Giorgio]

Impact: Environmental ☐	**Fiscal ☐**	**Community☐**	**Other☒**

Klein Hornig represents the Town alongside Town Counsel in the Ticcoma Green project.

Board/Commission Recommendation

N/A

Public Outreach

N/A

Connection to Existing Applicable Plan (i.e., Strategic Plan, Master Plan, etc.)

N/A

Attachments

1. Klein Hornig Engagement Letter & E-mail Request (10/31/2022)







Klein Hornig LLP
COUNSELORS AT LAW

101 Arch Street
Suite 1101
Boston, MA 02110
T 617.224.0600
F 617.224.0601

1325 G Street, NW
Suite 770
Washington, DC 20005
T 202.926.3400
F 202.926.3401

July 25, 2022

Town of Nantucket
37 Washington Street
Nantucket, MA 02554
Attn: Brian E. Turbitt, Director of Municipal Finance

Re: Engagement Letter for Legal Services
Ticcoma Green

Dear Mr. Turbitt:

We are pleased that the Town of Nantucket (the "**Town**") has asked Klein Hornig LLP to provide legal representation in connection with structuring and negotiating the Town's financial involvement in the proposed HallKeen development project on Nantucket known as Ticcoma Green (the "**Project**"). The purpose of this letter is to set forth our mutual agreement regarding the scope of services we are to provide, the amount and manner of payment of our fees, and certain other relevant matters. When countersigned by you, this letter will become a contract.

Scope of Services

We agree to provide the scope of services set forth in Exhibit A.

Fees and Expenses

Our fees for this engagement will be charged on an hourly basis at the rates set forth in Exhibit B. My partner Rebecca Melaas and I will have primary responsibility for this matter, and we will also draw upon the skills and services of our colleagues as necessary to provide high-quality, cost-effective representation. Fees and expenses will be billed monthly and are due and payable when billed. Any special fee arrangements are included in Exhibit B.

All professional staff are charged at a rate appropriate for their experience. We will review rates on an annual basis and, where appropriate, we reserve the right to increase rates once each year. We also may promote associates to a higher rate class once each year. Rate increases and associate promotions will typically take effect on January 1, and we will provide you with notice of any increases.

In addition to fees for professional services, Klein Hornig charges separately for all third-party or out-of-pocket expenses reasonably incurred for rendering its services, including without limitation conference calls, photocopying and printing, airfreight and other delivery services, travel and lodging, automobile mileage and parking, necessary meals, and filing or recording fees. We do not charge for standard telephone service. While we do not charge for routine in-house photocopying, printing, sending or receiving facsimiles, or the like, we reserve the right to charge for secretarial overtime mandated by the nature of the assignment, the cost of bulk mailings, bulk reproduction and distribution of documents, document binders in print or digital form, and similar costs.

Every effort will be made to use travel time for client related work; for time spent in travel that is not used for client work we will only bill up to ½ of the total travel time. Charges for transportation, meals, and lodging will be reasonable under the circumstances, recognizing, however, that (i) the least expensive transportation or lodging may not be available for travel arranged on short notice, and (ii) inexpensive transportation resulting in greater travel time may not be most cost-effective overall. Subject to the foregoing, Klein Hornig personnel will travel in economy class, make reasonable efforts to obtain special fares and/or travel on economy airlines, and otherwise seek to stay in comfortable non-luxury accommodations. Private vehicle usage will be charged at the then-prevailing IRS rate.

If you disagree with the amount of any fee billed to you, please bring your concerns to my attention. We will attempt to resolve any disagreement. In the event of a fee dispute that is not readily resolved, you have the right to request arbitration under supervision of the bar associations for the jurisdictions in which we practice, and we agree to participate fully in that process.

If you would like to receive invoices by email, please complete the form attached as Exhibit C.

Level of Service

We agree that in providing the services described in this letter we will zealously represent your interests, and provide you with timely and quality legal representation. If you believe that we are not meeting those standards of service in any way, I ask that you immediately bring the matter to my personal attention.

Termination

In our view, the relationship between a lawyer and client depends on a high level of trust and confidence on the part of both parties. If at any time we no longer have your confidence, you may terminate this agreement, provided that you arrange for full payment for all work done as of the date of termination. We will cooperate fully in providing any necessary information to any successor counsel so that your interests will be adequately represented during any such transition. Similarly, if we feel that it is no longer possible to represent your interests zealously, we will so inform you and arrange to terminate this agreement, providing for a smooth transition to any successor counsel of your choice. We reserve the right to resign from this representation if your actions or failure to act make it unduly difficult for us to provide legal services in a manner consistent with our professional and ethical standards, or if you are not paying our bill as required by this agreement. In the unlikely event we are required to institute legal

proceedings to collect fees and expenses, the prevailing party will be entitled to costs of collection including reasonable attorney's fees.

Conclusion of Representation

Unless previously terminated, our representation of you will terminate when we send you our final invoice for services rendered in connection with the Project. Following termination, any of your papers and property in our possession will be returned promptly upon receipt of payments of all outstanding invoices. We reserve the right to retain or dispose of our own files, including administrative records and internal lawyer work product, in accordance with applicable rules of professional conduct.

Publicity

Our firm occasionally makes reference to particular projects and clients in our attorney resumes, web site, social media and related materials. If you prefer that we not include references to your organization or the Project in such materials, kindly inform me and we will of course respect your wishes.

Issues Relating to Potential Conflict of Interest

As a general matter, we are required to obtain client consent if our representation of you might have an adverse effect on our representation of another client, or if our representation of another client might have an adverse effect on our representation of you.

Klein Hornig LLP specializes in affordable housing and community development law and we represent many clients who are active in this area on a regular basis. It is possible that your interests may conflict with the interest of some of our present or future clients. As an illustration of the foregoing, HallKeen may seek to borrow funds in connection with the Project from a lender that we represent, to obtain equity investments in connection with the Project from syndicators or investors that we represent, or compete for resources with other developers that we represent. It is also possible that we will represent another client in a parallel upper-tier transaction; for example, we might represent a client that invests at the upper tier with a syndicator and the syndicator invests the funds it has raised in the Project, or we might represent a lender participating in a loan made to the Project. In particular, please note that we have represented the following lenders and investors: Eastern Bank, Community Economic Development Assistance Corporation (CEDAC), BlueHub Loan Fund, Inc., Preservation Mass, Local Initiatives Support Corporation, AEGON, Hudson Housing Capital, Wells Fargo, Bank of America, Michel Associates, Citizens Financial Group, Berkshire Bank, Bridgewater Bank, Fallbrook Capital, Dorfman Capital and Richman Capital.

By entering into this engagement letter, you agree that this firm may represent existing or new clients in any matter that is not directly related to our work on the Project, even if the interests of such other clients in those other matters are directly adverse to the Town, and that we may represent clients involved in a parallel upper-tier transaction. Your prospective consent to conflicting representation contained in the preceding sentence shall not apply to any representation that involves the subject matter of any work we

have done for the Town, and should other firm clients have a direct adverse interest in the Project we would not represent them in connection with the Project but instead would expect to continue representing the Town. Moreover, we cannot and will not disclose to third parties confidential information we have obtained through our representation of you without your consent.

To the extent our representation of you might give rise to other conflicts of interest, they are discussed in Exhibit D.

Relationship with Other Consultants

We understand that the Town has engaged Ed Marchant and Bernie Husser (the "**Consultants**") as other Town consultants in connection with the Project. By this letter, you agree that we may share confidential client information with the Consultants.

If you have any questions about the provisions of this letter, I would be happy to discuss them with you. If these arrangements are satisfactory to you, please so indicate by signing a copy of this letter and returning it to me. We are very much looking forward to working with you, and to the successful development of the Project.

Very truly yours,

Joseph S. Lieber

Agreed:

Town of Nantucket

By: C. Elizabeth Gibson
Print Name: C ELizabeth Gibson
Title: Town Manager
Dated: July __ 2022
SEPTEMBER 6, 2022

EXHIBIT A

SCOPE OF SERVICES

We agree to provide the legal services reasonably necessary in connection with the Project, as you request from time to time.

EXHIBIT B

KLEIN HORNIG LLP
HOURLY FEE SCHEDULE
Effective through December 31, 2022

Category	Rate
Partners/Of Counsel	$405 - $495/hour
Senior Counsel	$405 - $450/hour
Associates	$275 - $405/hour
Paralegals	$240 - $260/hour

EXHIBIT C

INVOICE TRANSMITTAL BY EMAIL

Client hereby requests that KH deliver its invoices to Client **via email** to the recipients noted below. The Client understands and agrees that KH's invoices may contain confidential and sensitive descriptions of legal services provided to Client (as well as the cost thereof), and consents and agrees to the transmittal of invoices via email to the recipients noted below.

Please send invoices to:

Name: Tucker Holland
Email: THolland@nantucket-ma.gov

With email copies sent to:

Name: _____
Email: _____

Please indicate whether you would like hard copies of your invoices sent via regular mail.

☑ No, please send invoices by email only, to the above recipients.
☐ Yes, please send hard copies by mail to the following addressee:

Name: _____
Address 1: _____
Address 2: _____
City: _____, State: _____ Zip: _____

Please notify KH as soon as practicable if any of the foregoing information changes, especially the name(s) of the person(s) to whom invoices should be sent.

EXHIBIT D

CONFLICTS OF INTEREST

In addition to the issues discussed in the body of the engagement letter, the following conflicts of interest are applicable to our representation of you:

None.

Agenda Item Summary

Agenda Item #	X. 1.
Date	11/9/2022

Staff

Vincent Murphy, Coastal Resilience Coordinator

Subject

Notice of Intent for Baxter Road and Sconset Bluff Stabilization and Coastal Resilience Project

Executive Summary

The Town of Nantucket, with assistance from Arcadis and Sconset Beach Preservation Fund with assistance from Epsilon, have jointly developed a Notice of Intent for the stabilization of Sconset Bluff for the maintenance of Baxter Road, homes, infrastructure, and historic properties.

Staff Recommendation

Select Board to review the attached Notice of Intent, and if satisfied, to proceed jointly as a property owner with SBPF to submit this NOI to the Conservation Commission.

Background/Discussion

Through Town supervision and with assistance from Arcadis staff, we have overseen and molded what we see as a workable plan for bluff toe stabilization. This represents a significant step forward to resolving several long running issues.

Impact: Environmental ☒ Fiscal ☒ Community☒ Other☒

Potential major positive impacts to the Baxter Road area, as a public private partnership with the Town and SBPF; an opportunity to retain existing infrastructure and resources. Reduced costs and impacts to tax base, delays or significantly mitigates the need for road relocation/ alternative access

Board/Commission Recommendation

N/A

Public Outreach

Public review of the NOI at the Select Board level.

Connection to Existing Applicable Plan (i.e., Strategic Plan, Master Plan, etc.)

Baxter Road Long Term Planning (Completed Oct 2021) & Coastal Resilience Plan (Completed Jan 2022)

Attachments

Notice of Intent for Baxter Road and Sconset Bluff Stabilization and Coastal Resilience Project







Bureau of Resource Protection – Wetlands and Waterways
Form 3 – Notice of Intent
Massachusetts Wetlands Protection Act (M.G.L. c.131 s.40)
Town of Nantucket Wetland Bylaw (Ch. 136)

Baxter Road & Sconset Bluff Stabilization and Coastal Resiliency Project



Submitted to:
Nantucket Conservation Commission
131 Pleasant Street
Nantucket, MA 02554

Submitted by:
Town of Nantucket
16 Broad Street
Nantucket, MA 02554
and
Siasconset Beach Preservation Fund
P.O. Box 2279
Nantucket, MA 02554

Prepared by:
Epsilon Associates, Inc.
3 Mill & Main Place, Suite 250
Maynard, MA 01754

In Association with:
W.F. Baird & Associates Coastal Engineers Ltd.

Epsilon ASSOCIATES INC.

November 17, 2022

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Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

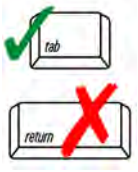
Provided by MassDEP:

MassDEP File Number

Document Transaction Number

City/Town

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Note: Before completing this form consult your local Conservation Commission regarding any municipal bylaw or ordinance.

A. General Information

1. Project Location (**Note:** electronic filers will click on button to locate project site):

41-119 Baxter Road — a. Street Address
Nantucket — b. City/Town
02554 — c. Zip Code

Latitude and Longitude:
N: 41º 16’ 38” — d. Latitude
W: 69º 57’ 41” — e. Longitude

Multiple Owners - See Attachment C — f. Assessors Map/Plat Number
Multiple Owners - See Attachment C — g. Parcel /Lot Number

2. Applicant:

Josh — a. First Name
Poster — b. Last Name
Siasconset Beach Preservation Fund (SBPF) — c. Organization
P.O. Box 2279 — d. Street Address
Nantucket — e. City/Town
MA — f. State
02584 — g. Zip Code
h. Phone Number
i. Fax Number
jposter@risingtidellc.net — j. Email Address

3. Property owner (required if different from applicant): ☐ Check if more than one owner

Multiple Owners - See Attachment C — a. First Name
b. Last Name
c. Organization
Town of Nantucket and multiple private property owners 41-119 Baxter Road) — d. Street Address
e. City/Town
f. State
g. Zip Code
h. Phone Number
i. Fax Number
j. Email address

4. Representative (if any):

Dwight — a. First Name
Dunk — b. Last Name
Epsilon Associates, Inc. — c. Company
3 Mill & Main Place, Suite 250 — d. Street Address
Maynard — e. City/Town
MA — f. State
01754 — g. Zip Code
978-897-7100 — h. Phone Number
978-897-0099 — i. Fax Number
ddunk@epsilonassociates.com — j. Email address

5. Total WPA Fee Paid (from NOI Wetland Fee Transmittal Form):

a. Total Fee Paid
b. State Fee Paid
c. City/Town Fee Paid

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WPA Form 3 – Notice of Intent

A. General Information

2. Applicants:

Siasconset Beach Preservation Fund
P.O. Box 2279
Nantucket, MA 02584
Attn.: Mr. Josh Posner
jposner@risingtidellc.net

Town of Nantucket
16 Broad Street
Nantucket, MA 02554
Attn.: Ms. Elizabeth Gibson
TownManager@nantucket-ma.gov

3. Property Owners:

Public Lands:

Town of Nantucket
16 Broad Street
Nantucket, MA 02554
Attn.: Ms. Elizabeth Gibson
TownManager@nantucket-ma.gov

Multiple Private Properties:

See NOI Attachment C – Property Owners

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Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

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City/Town

A. General Information (continued)

6. General Project Description:

Maintain the existing geotube array, and extend toe-protection north to 119 Baxter Road and South to 41 Baxter Road. Protection wil be built in phases using three protection measures: (1) geotubes, (2) coir terraces, and (3) dune nourishment. Purpose is to protect public infrastructure, buildings and the Coastal Bank from storm damage. See this NOI and supporting documents for project details.

7a. Project Type Checklist: (Limited Project Types see Section A. 7b.)

1. ☐ Single Family Home
2. ☐ Residential Subdivision
3. ☐ Commercial/Industrial
4. ☐ Dock/Pier
5. ☐ Utilities
6. ☒ Coastal engineering Structure
7. ☐ Agriculture (e.g., cranberries, forestry)
8. ☐ Transportation
9. ☐ Other

7b. Is any portion of the proposed activity eligible to be treated as a limited project (including Ecological Restoration Limited Project) subject to 310 CMR 10.24 (coastal) or 310 CMR 10.53 (inland)?

1. ☐ Yes ☒ No

If yes, describe which limited project applies to this project. (See 310 CMR 10.24 and 10.53 for a complete list and description of limited project types)

2. Limited Project Type

If the proposed activity is eligible to be treated as an Ecological Restoration Limited Project (310 CMR10.24(8), 310 CMR 10.53(4)), complete and attach Appendix A: Ecological Restoration Limited Project Checklist and Signed Certification.

8. Property recorded at the Registry of Deeds for:

Nantucket	See Attachment C
a. County	b. Certificate # (if registered land)
See Attachment C	See Attachment C
c. Book	d. Page Number

B. Buffer Zone & Resource Area Impacts (temporary & permanent)

1. ☐ Buffer Zone Only – Check if the project is located only in the Buffer Zone of a Bordering Vegetated Wetland, Inland Bank, or Coastal Resource Area.
2. ☐ Inland Resource Areas (see 310 CMR 10.54-10.58; if not applicable, go to Section B.3, Coastal Resource Areas).

Check all that apply below. Attach narrative and any supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

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Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

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Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

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B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

For all projects affecting other Resource Areas, please attach a narrative explaining how the resource area was delineated.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Bank	1. linear feet	2. linear feet
b. ☐ Bordering Vegetated Wetland	1. square feet	2. square feet
c. ☐ Land Under Waterbodies and Waterways	1. square feet 3. cubic yards dredged	2. square feet

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. ☐ Bordering Land Subject to Flooding	1. square feet 3. cubic feet of flood storage lost	2. square feet 4. cubic feet replaced
e. ☐ Isolated Land Subject to Flooding	1. square feet 2. cubic feet of flood storage lost	3. cubic feet replaced
f. ☐ Riverfront Area	1. Name of Waterway (if available) - **specify coastal or inland**	

2. Width of Riverfront Area (check one):

☐ 25 ft. - Designated Densely Developed Areas only

☐ 100 ft. - New agricultural projects only

☐ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: _____ square feet

4. Proposed alteration of the Riverfront Area:

a. total square feet _____ b. square feet within 100 ft. _____ c. square feet between 100 ft. and 200 ft. _____

5. Has an alternatives analysis been done and is it attached to this NOI? ☐ Yes ☐ No

6. Was the lot where the activity is proposed created prior to August 1, 1996? ☐ Yes ☐ No

3. ☒ Coastal Resource Areas: (See 310 CMR 10.25-10.35)

Note: for coastal riverfront areas, please complete **Section B.2.f**. above.

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Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

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Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

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B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

Check all that apply below. Attach narrative and supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. ☐ Land Under the Ocean	1. square feet 2. cubic yards dredged	
c. ☐ Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. ☒ Coastal Beaches	Temp=105,2[illegible] Perm=116,7[illegible] 1. square fe[illegible]	2. cubic yards beach nourishment
e. ☒ Coastal Dunes	1. square feet	3,485 2. cubic yards dune nourishment
	Size of Proposed Alteration	Proposed Replacement (if any)
f. ☒ Coastal Banks	3,5[illegible]0 1. li[illegible]et	
g. ☐ Rocky Intertidal Shores	1. squa[illegible]feet	
h. ☐ Salt Marshes	1. square feet	2. sq ft restoration, rehab., creation
i. ☐ Land U[illegible]lt Pon[illegible]	1. square feet 2. cubic yards dredged	
j. ☐ Land Co[illegible]aining Shellfish	1. square feet	
k. ☐ Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above 1. cubic yards dredged	
l. ☒ Land Subject to Coastal Storm Flowage	16,400 1. square feet	

4. ☐ Restoration/Enhancement

If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.2.b or B.3.h above, please enter the additional amount here.

a. square feet of BVW

b. square feet of Salt Marsh

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings

b. number of replacement stream crossings

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Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

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Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

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C. Other Applicable Standards and Requirements

☐ This is a proposal for an Ecological Restoration Limited Project. Skip Section C and complete Appendix A: Ecological Restoration Limited Project Checklists – Required Actions (310 CMR 10.11).

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

1. Is any portion of the proposed project located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP)? To view habitat maps, see the *Massachusetts Natural Heritage Atlas* or go to http://maps.massgis.state.ma.us/PRI_EST_HAB/viewer.htm.

   a. ☒ Yes ☐ No

   If yes, include proof of mailing or hand delivery of NOI to:

   Natural Heritage and Endangered Species Program
   Division of Fisheries and Wildlife
   1 Rabbit Hill Road
   Westborough, MA 01581

   2021
   b. Date of map

   If *yes*, the project is also subject to Massachusetts Endangered Species Act (MESA) review (321 CMR 10.18). To qualify for a streamlined, 10-day, MESA/Wetlands Protection Act review, please complete Section C.1.c, and include requested materials with this Notice of Intent (NOI); *OR* complete Section C.2.f, if applicable. *If MESA supplemental information is not included with the NOI, by completing Section C of this NOI, NHESP will require a separate MESA filing which may take up to 90 days to review (unless noted exceptions in Section 2 apply, see below).*

   c. Submit Supplemental Information for Endangered Species Review*

      1. ☐ Percentage/acreage of property to be altered:

         (a) within Wetland Resource Area — percentage/acreage

         (b) outside Resource Area — percentage/acreage

      2. ☐ Assessor's Map or right-of-way plan of site

2. ☒ Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work **

   (a) ☒ Project description (including description of impacts outside of wetland resource area & buffer zone)

   (b) ☒ Photographs representative of the site

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* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see https://www.mass.gov/ma-endangered-species-act-mesa-regulatory-review).
Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

** MESA projects may not be segmented (321 CMR 10.16). The applicant must disclose full development plans even if such plans are not required as part of the Notice of Intent process.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 3 – Notice of Intent
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
MassDEP File Number
Document Transaction Number
City/Town

C. Other Applicable Standards and Requirements (cont'd)

(c) ☒ MESA filing fee (fee information available at https://www.mass.gov/how-to/how-to-file-for-a-mesa-project-review).
Make check payable to "Commonwealth of Massachusetts - NHESP" and ***mail to NHESP*** at above address

*Projects altering **10 or more acres** of land, also submit:*

(d) ☐ Vegetation cover type map of site

(e) ☐ Project plans showing Priority & Estimated Habitat boundaries

(f) OR Check One of the Following

1. ☐ Project is exempt from MESA review.
Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, https://www.mass.gov/service-details/exemptions-from-review-for-projectsactivities-in-priority-habitat; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)

2. ☐ Separate MESA review ongoing. a. NHESP Tracking # b. Date submitted to NHESP

3. ☐ Separate MESA review completed.
Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.

3. For coastal projects only, is any portion of the proposed project located below the mean high water line or in a fish run?

a. ☐ Not applicable – project is in inland resource area only b. ☐ Yes ☒ No

If yes, include proof of mailing, hand delivery, or electronic delivery of NOI to either:

South Shore - Cohasset to Rhode Island border, and the Cape & Islands:

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
836 South Rodney French Blvd.
New Bedford, MA 02744
Email: dmf.envreview-south@mass.gov

North Shore - Hull to New Hampshire border:

Division of Marine Fisheries -
North Shore Office
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930
Email: dmf.envreview-north@mass.gov

Also if yes, the project may require a Chapter 91 license. For coastal towns in the Northeast Region, please contact MassDEP's Boston Office. For coastal towns in the Southeast Region, please contact MassDEP's Southeast Regional Office.

c. ☐ Is this an aquaculture project? d. ☐ Yes ☒ No

If yes, include a copy of the Division of Marine Fisheries Certification Letter (M.G.L. c. 130, § 57).

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Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

City/Town

C. Other Applicable Standards and Requirements (cont'd)

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

4. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?

   a. ☐ Yes ☒ No If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations). **Note:** electronic filers click on Website.

   b. ACEC

5. Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?

   a. ☐ Yes ☒ No

6. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?

   a. ☐ Yes ☒ No

7. Is this project subject to provisions of the MassDEP Stormwater Management Standards?

   a. ☐ Yes. Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:

      1. ☐ Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol. 2, Chapter 3)

      2. ☐ A portion of the site constitutes redevelopment

      3. ☐ Proprietary BMPs are included in the Stormwater Management System.

   b. ☒ No. Check why the project is exempt:

      1. ☐ Single-family house

      2. ☐ Emergency road repair

      3. ☐ Small Residential Subdivision (less than or equal to 4 single-family houses or less than or equal to 4 units in multi-family housing project) with no discharge to Critical Areas.

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D. Additional Information

☐ This is a proposal for an Ecological Restoration Limited Project. Skip Section D and complete Appendix A: Ecological Restoration Notice of Intent – Minimum Required Documents (310 CMR 10.12).

Applicants must include the following with this Notice of Intent (NOI). See instructions for details.

Online Users: Attach the document transaction number (provided on your receipt page) for any of the following information you submit to the Department.

1. ☒ USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)

2. ☒ Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.

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D. Additional Information (cont'd)

3. ☐ Identify the method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s), Determination of Applicability, Order of Resource Area Delineation, etc.), and attach documentation of the methodology.

4. ☒ List the titles and dates for all plans and other materials submitted with this NOI.

Baxter Road & Sconset Bluff Stabilizationand Coastal Resiliency Project - Permit Drawings
a. Plan Title

W.F. Baird & Assoc. Coastal Eng. Ltd..
b. Prepared By

c. Signed and Stamped by

d. Final Revision Date

Varies
e. State

See Attachment- Project Plans
f. Additional Plan or Document Title

10-26-2022
g. Date

5. ☒ If there is more than one property owner, please attach a list of these property owners not listed on this form.

6. ☒ Attach proof of mailing for Natural Heritage and Endangered Species Program, if needed.

7. ☐ Attach proof of mailing for Massachusetts Division of Marine Fisheries, if needed.

8. ☒ Attach NOI Wetland Fee Transmittal Form

9. ☐ Attach Stormwater Report, if needed.

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E. Fees

1. ☐ Fee Exempt: No filing fee shall be assessed for projects of any city, town, county, or district of the Commonwealth, federally recognized Indian tribe housing authority, municipal housing authority, or the Massachusetts Bay Transportation Authority.

Applicants must submit the following information (in addition to pages 1 and 2 of the NOI Wetland Fee Transmittal Form) to confirm fee payment:

2. Municipal Check Number

3. Check date

4. State Check Number

5. Check date

Epsilon Associates
6. Payor name on check: First Name

7. Payor name on check: Last Name

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

City/Town

F. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

1. Signature of Applicant	2. Date
3. Signature of Property Owner (if different)	4. Date
5. Signature of Representative (if any)	6. Date

For Conservation Commission:
Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

For MassDEP:
One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a **copy** of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

Other:
If the applicant has checked the "yes" box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.

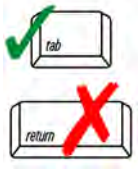
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Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A. Applicant Information

1. Location of Project:

41 - 119 Baxter Road	Nantucket
a. Street Address	b. City/Town
	$987.50
c. Check number	d. Fee amount

2. Applicant Mailing Address:

See page 1a of 2	
a. First Name	b. Last Name
c. Organization	
d. Mailing Address	
e. City/Town	State / g. Zip Code
h. Phone Number / i. Fax Number	Email Address

3. Property Owner (if different):

See Page 1a of 2 and Attachment C	
a. First Name	b. Last Name
c. Organization	
d. Mailing Address	
e. City/Town	f. State / g. Zip Code
h. Phone Num / Fax Number	j. Email Address

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B. Fees

To calculate filing fees, refer to the category fee list and examples in the instructions for filling out WPA Form 3 (Notice of Intent).

Fee should be calculated using the following process & worksheet. ***Please see Instructions before filling out worksheet.***

Step 1/Type of Activity: Describe each type of activity that will occur in wetland resource area and buffer zone.

Step 2/Number of Activities: Identify the number of each type of activity.

Step 3/Individual Activity Fee: Identify each activity fee from the six project categories listed in the instructions.

Step 4/Subtotal Activity Fee: Multiply the number of activities (identified in Step 2) times the fee per category (identified in Step 3) to reach a subtotal fee amount. Note: If any of these activities are in a Riverfront Area in addition to another Resource Area or the Buffer Zone, the fee per activity should be multiplied by 1.5 and then added to the subtotal amount.

Step 5/Total Project Fee: Determine the total project fee by adding the subtotal amounts from Step 4.

Step 6/Fee Payments: To calculate the state share of the fee, divide the total fee in half and subtract $12.50. To calculate the city/town share of the fee, divide the total fee in half and add $12.50.

NOI Wetland Fee Transmittal Form

A. Applicant Information

2. Applicants Mailing Addresses:

Siasconset Beach Preservation Fund
P.O. Box 2279
Nantucket, MA 02584
Attn.: Mr. Josh Posner
jposner@risingtidellc.net

Town of Nantucket
16 Broad Street
Nantucket, MA 02554
Attn.: Ms. Elizabeth Gibson
TownManager@nantucket-ma.gov

3. Property Owners:

Public Lands:

Town of Nantucket
16 Broad Street
Nantucket, MA 02554
Attn.: Ms. Elizabeth Gibson
TownManager@nantucket-ma.gov

Multiple Private Properties:

See NOI Attachment C – Property Owners

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Massachusetts Department of Environmental Protection
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NOI Wetland Fee Transmittal Form
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
Category 5 - C.B. Toe Protection	3,485 lf	$4/lf	Max = $2,000

Step 5/Total Project Fee:

Step 6/Fee Payments:

Total Project Fee:	$2,000 a. Total Fee from Step 5
State share of filing Fee:	$987.50 b. 1/2 Total Fee **less $**12.50
City/Town share of filling Fee:	$1012.50 c. 1/2 Total Fee **plus** $12.50

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C. Submittal Requirements

a.) Complete pages 1 and 2 and send with a check or money order for the state share of the fee, payable to the Commonwealth of Massachusetts.

Department of Environmental Protection
Box 4062
Boston, MA 02211

b.) **To the Conservation Commission:** Send the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and the city/town fee payment.

To MassDEP Regional Office (see Instructions): Send a copy of the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and a **copy** of the state fee payment. (E-filers of Notices of Intent may submit these electronically.)

Attachment A

Project Narrative

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ATTACHMENT A PROJECT NARRATIVE

1.0 Introduction

On behalf of the Siasconset Beach Preservation Fund, Inc. ("SBPF") and the Town of Nantucket ("TON" or "Town"), (collectively the "Applicants"), and with consent of the landowners, including the Town of Nantucket, Epsilon Associates, Inc. ("Epsilon") submits this Notice of Intent ("NOI") to the Nantucket Conservation Commission ("Commission") for the Baxter Road and Sconset Bluff Stabilization and Coastal Resiliency Project (the "Project"). This NOI was prepared in accordance with the Massachusetts Wetlands Protection Act ("WPA" or "Act") [M.G.L. c. 131, § 40] and its implementing Regulations [310 CMR 10.00], i.e., the state Regulations, as well as Chapter 136 of the Nantucket Wetland Protection Bylaw ("Bylaw"), and the Town of Nantucket Conservation Commission Wetland Protection Regulations, i.e., the local Regulations.

The shoreline protection proposed in this NOI Project is informed by the Baxter Road Long-Term Planning: Summary of Findings Memo prepared for the Town of Nantucket by Arcadis [1] ("Long-Term Planning Memo"). That document included an assessment of alternatives for technically feasible solutions to address bluff and toe erosion in the Project area. The authors identified action for the short-, medium- and long-term time horizons. Although the long-term action was identified as retreat, the identified mid-term actions include installation of interim bluff stabilization measures to protect Baxter Road and existing homes from erosion, plus monitoring. The long-term action, which includes an alternative access plan, would commence after certain tipping point triggers are met that require retreat. An alternative access plan is presently being developed by the Town for the northern part of Baxter Road.

The Project area extends from 41 to 119 Baxter Road, as depicted on **Figure 1 – USGS Locus Map**, and **Figure 2 – Aerial Locus Map**. The Project described in this NOI is the mid-term action to stabilize Sconset Bluff with ongoing monitoring to: (1) monitor the effect of shoreline stabilization to the abutting beaches, (2) monitor bluff conditions that trigger progression to the different stabilization techniques summarized below, and (3) continue to monitor bluff erosion and conditions that trigger the long-term actions. This mid-term action is proposed to continue until tipping points trigger the long-term action. Greater detail about the triggers is provided in Section 4 below. To implement the Project in phases and to design the toe protection measures to better match bluff sand contribution the Project Area is divided into five reaches (see **Figure 3 – Reaches and Toe Protection Types**) which are:

Reach 1: 600 feet from 107A to 119 Baxter Road
Reach 2: 1,480 feet from 85 to 107A Baxter Road
Reach 3: 660 feet from 73 to 85 Baxter Road
Reach 4: 690 feet from 61 to 71 Baxter Road
Reach 5: 1,280feet from 41 to 61Baxter Road

[1] Baxter Road Long Term Planning: Summary of Findings, Arcadis, Oct 20, 2021.

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The toe protection measures presented in this NOI include: (1) three different elements – geotubes, coir terraces and dune nourishment based on bank conditions and phase; and (2) the bluff sand contribution calculated for each reach, so that compensatory sand volume matches pre-construction Reach contribution volume. Further, the toe protection is planned to be phased, with specific criteria and procedures defined in Section 4 to move from one phase to the next. The planned toe protection involves the following phases:

Phase 1:

- Maintain the existing sand filled geotextile ("geotube") array plus sand template, and extend the sand filled geotube array plus the sand template to provide continuous bluff protection from 69 Baxter Road to 117 Baxter Road with a return extending across a portion of 119 Baxter Road, for a total of 2,740 linear feet ("lf") comprised of Reaches 1, 2, and 3. (Note the 400-foot extension fronting 109 through 117 Baxter Road will be the first priority for construction.);
- Plant areas of denuded bluff face with beach grass to stabilize the exposed bluff soils (placement of sandy soil to fill in rills on the slope may be needed before planting);
- Install a continuous array of coir terraces to replace the several individual coir terrace installations from the edge of the dune in front of 61Baxter Road to the edge of the proposed geotubes at 69 Baxter Road, for a total of 690lf comprised of Reach 4 to provide some protection of the toe of the bluff until a sustainable sand source is secured (the sustainable sand source is presently identified as off-shore sand); and
- Monitor the dune south of 61Baxter Road to approximately 41 Baxter Road, Reach 5, which is 1,280 lf.
- Improve the passive recreational uses and accessibility along Sconset Bluff by installing public seating in the viewing area, installing a pet waste station, and engaging an engineer to evaluate the design and installation of public access stairs in one to two locations along the bluff, the TON will assign a beach access number to the new access points, the TON will include Sconset Beach in the public water quality monitoring program.

Phase 2:

- Extend the continuous geotube system from 61Baxter Road to 71 Baxter Road, Reach 4. This reach currently meets the physical slope erosion conditions for a geotube toe protection system, but the extension will not occur until a sustainable sand source is secured;
- Plant areas of denuded bluff face above geotubes installed in Phase 2 with beach grass to stabilize the exposed bluff soils; and
- Augment the dune along Reach 5 by placing sand seaward of the dune (i.e., a sacrificial dune) from 59Baxter Road to approximately 41 Baxter Road to slow dune loss in this reach, after a sustainable sand source is secured.

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- Continue to improve the recreational use along Baxter Road by installing additional public access stairs, after evaluation by an engineer determines such access will be safe and stable.

Future Phases:

- Replace the sacrificial dune in Reach 5 with coir terraces when the dune is documented to be permanently eroded, i.e., observed to be eroded for three consecutive annual inspections; and
- Replace the coir terrace with the geotube system when the bluff exhibits toe erosion and mid-slope failure even with the coir terraces in place.

This approach integrates a coastal engineering structure ("CES") along the bluff reaches that are actively eroding and which presents the greatest threat to damage and/or loss of the road, infrastructure and homes, plus interim continuous coir terraces, and a nature-based system (sacrificial dune) to slow bluff erosion (see **Figure 4 - Reaches and Toe Protection**). The top of Coastal Bank offset to the road immediately north and south of the existing geotube array presently meet the imminent threat criteria previously defined by the TON. This NOI describes the full-length project with the three toe protection measures and established tipping points so that as tipping points are triggered the TON and SBPF would seek an administrative approval (which would be incorporated into an Order of Conditions ("OOC") as a special condition) that defines the process to progress from one measure to the next, within the authority of an OOC issued for this project. To support this approach, the Applicants respectfully request that the OOC be issued as a 5-year term OOC pursuant to 310 CMR 10.05(6)(d). Upon completion of construction or at the end of the 5-year term, the Applicant would seek a Certificate of Compliance in accordance with the OOC.

The Project is designed to protect the interests of the Act and the values of the Bylaw, focusing on the interests of storm damage prevention and flood control. The Project satisfies (a) all of the performance standards for Coastal Beach and Coastal Bank contained in the state Regulations, and (b) all of the performance standards for Coastal Beach, Coastal Bank and Land Subject to Coastal Storm Flowage contained in the local Regulations. See Section 7 below.

Section 7 of this NOI addresses in detail all of the established state and local Regulations applicable to the Project, and explains how and why each of them is satisfied. The Project complies with the Act and Bylaw and the applicable state and local regulations for the following reasons:

1. The Project purpose is to augment the capability of the Coastal Bank to protect the interests of the Act and the values of the Bylaw, primarily the interests of the storm damage prevention and flood control.

2. It is necessary to protect pre-1978 homes and public infrastructure from imminent harm and risk of destruction (see Section 2.4 below);

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3. It complies with the Wetland Protection Act regulations applicable to coastal engineering structures on coastal bank (310 CMR 10.30) (see Section 7.2.3 below); and

4. It complies with the provisions of the Nantucket Wetlands Bylaw applicable to coastal engineering structures (Section 2.02 of the Bylaw) (see Section 7.3.1 below).

1.1 Brief History of Existing Geotube System

The Siasconset Beach Preservation Fund is a Massachusetts 501(c)(3) not-for-profit corporation created by seasonal residents of Nantucket to protect historic homes, the road and public infrastructure along Baxter Road in the Sconset area of Nantucket. The SBPF has been working for more than 20 years to stabilize Sconset Bluff to protect homes and infrastructure along and in Baxter Road. The proposed Project is a continuation of this long-standing effort.

The Town was previously advised by Town Counsel that it is legally obligated to provide access to the properties on Baxter Road. Given the imminent threat to Baxter Road, the Town and SBPF entered into a Memorandum of Understanding ("MOU") on July 5, 2013 to enter into a partnership to protect Sconset Bluff; that MOU was further amended on October 9, 2013. Part of the project area, including Sconset Beach, is owned by the Town, and the Town agreed to allow access through and the use of Town land for an emergency erosion control project.

The purpose of this Project is to build upon the existing pilot project. The pilot project evolved from the original proposal to stabilize the Coastal Bank seaward of 55 – 117 Baxter Road as originally conceived by the SBPF and the TON. At that time the SBPF and TON jointly pursued the design and permitting of a nearly 4,000 linear foot stone revetment along the Sconset Bluff. Through that previous permitting process, and because of intense storms in the winter of 2012-2013, the stone revetment evolved into a geotube system covered by sacrificial sand. i.e., a "sand template" (referred to herein as the geotube system) to meet agencies' and the public's concerns regarding a stone revetment in this location. Through that process, it was agreed to in the OOC (SE48-2824) that the full-length project would be built in segments with the existing pilot project installed first along the most imperiled +/-900 feet of Coastal Bank, followed by a long length extension, to be built some three- to six-years later.

1.1.1 Existing Geotube System

The existing pilot project was constructed pursuant to a WPA Emergency Certification and it was re-authorized by the 2015 OOC. It consists of three and four tiers of geotextile tubes covered by a sand template, vegetation planting on the Coastal Bank above the sand template, and the installation of a stormwater runoff drainage system. The first phase of the existing array was constructed in late December 2013 and January 2014, and it included the installation of three stacked tiers of 45-foot circumference geotextile tubes at the base of the eroding Coastal Bank. That first phase of the existing array extended along approximately 852 feet at the toe of the Bank from 87-105 Baxter Road. The second phase of the existing array (DEP File No. SE48-2824) was

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constructed in October 2015 through February 2016, and it included the installation of a fourth tier of geotextile tubes on Lots 91-99, intermediate returns, end returns, and a surface runoff drainage system. With the returns included, the total length of the existing geotube array is 947 feet.

As stipulated in both the Superseding Order of Conditions ("SOC") (DEP File No. SE48-2610) and the OOC (DEP File No. SE48-2824) SBPF waited until January 2018 to submit a follow-up NOI to extend the Coastal Bank stabilization project to a total length of nearly 4,000 feet. Because the geotube system has proven effective at stabilizing the Coastal Bank and no adverse effects have been observed to downdrift coastal landforms, the applicant proposed to extend the existing four tier geotube system 895 feet to the north and 1,978 feet to the south, including returns. That NOI was submitted in January 2018. After a lengthy review process the Commission denied the OOC for the proposed extension (DEP File No. SE48-3115) pursuant to the WPA and the Bylaw. The SBPF requested a SOC from MassDEP and appealed the denial under the Bylaw to Superior Court. The request for a SOC (which meets the definition of a "Permit" in 301 CMR 11.02), plus the exceedance of two MEPA Wetland review thresholds at 301 CMR 11.03(3)(b)1.a. triggered MEPA review in the form of a Notice of Project Change ("NPC"), EEA No. 15240. After the Certification the NPC was issued, and the Massachusetts Department of Environmental Protection ("MassDEP or "Department") then issued an SOC on December 19, 2019 (DEP File No. SE48-3115) allowing the project to proceed pursuant to the Act. Even though the DEP approved the project, the appeal of the Bylaw denial to Superior Court was still pending and in connection with the MOU with the TON, SBPF has withdrawn that appeal with the intent on seeking the Commissions review of a joint application. Thereafter, the Commission issued an Enforcement Order ("EO") to remove the pilot project in the summer of 2021, and removal of the existing project takes effect on December 5, 2022. SBPF and the TON submitted a Compliance Plan and Operations and Maintenance Manual to the Commission for review, much of which was contemplated during the 2020 Working Group. SBPF and the TON requested a delay in the removal pending discussions between the TON, SBPF and the Commission on the Compliance Plan but the Commission rejected this request.

In the past 18- to 24-months the SBPF and TON have worked cooperatively to retain the existing array and develop a plan to stabilize the bluff to protect Baxter Road and homes which are still in danger of damage or loss caused by bluff erosion. That joint plan to stabilize the bluff toe is the subject of this NOI.

1.1.2 Review of Existing Geotube System

The existing pilot project demonstrates the efficacy of this type of CES to stabilize the eroding Sconset Bluff and concomitantly has not adversely affected the adjacent beaches. A summary review of the existing array is presented below.

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The geotube system is protecting an approximately 950-foot reach of Sconset Bluff from erosion. The data indicate the eastern coast of Nantucket, including the Sconset Bluff, was, and still is, retreating landward[2]. Data show that pre-construction, the pilot project bluff reach was retreating approximately 4.5 feet per year ("ft/yr"). Post-construction data shows that the 950-foot-long stretch of bluff protected by the pilot project has remained stable since it was constructed, i.e., the top of Coastal Bank is not retreating landward. The remainder of the shoreline not protected by the geotube system has continued to retreat, as described in Section 2.2 and Table 1 below.

Field data and monitoring reports indicates that the pilot project is not adversely affecting the fronting or adjacent beaches and bank. One of the regulatory standards is that coastal engineering structures on Coastal Banks shall not harm adjacent beaches and bank (downdrift landforms). Field data gathered by the Woods Hole Group and presented in **Figure 4 – Adjacent Beach Survey Graphs** shows the beach in front of and adjacent to the geotubes, approximately 1,000 feet to the north and south, is not eroding faster post-construction than they were before construction[3]. As mentioned above, the eastern shore is eroding, therefore the landward movement of the MLW line is expected. The erosion rate of the beach fronting and adjacent to the pilot project has not increased after construction of the pilot project as compared to pre-construction rates, see **Figure 4.**

Compensatory sand is contributed off the template and adds sand to the littoral system to compensate for the presence of the CES. Historically in Massachusetts compensatory sand was not required for CESs, e.g., revetments and seawalls. It was observed that preventing sediment from moving off protected coastal landforms can reduce sediment introduced from glacial landforms to the littoral system and thus harming downdrift beaches. Consistent with contemporary practice, the SBPF adds sand to the littoral system from the sand covering the geotubes, *i.e.*, the template. This is preventing harm to the fronting and nearby beaches by continuing to contribute sediment to the littoral drift system to replace the sediment not being contributed from the protected Coastal Bank. The average annual sand volume contributed off the template exceeds the pre-construction rate of sand contributed off this reach of Sconset Bluff as documented by CP&E using an Annual Littoral transport model approach[4], and Epsilon Associates, Inc. using the standard MassDEP and Coastal Zone Management ("CZM") formula (retreat rate x bank height x bank length). Both independent calculations yielded a pre-construction sediment contribution rate of approximately 12 cubic yards per linear foot per year "cy/lf/yr." Through June 2022, the average annual rate of compensatory sand contributed off the template was approximately 13.9 cy/lf/yr. This represents an additional 1.9 cy/lf/yr of sand, exceeding the annual rate of pre-construction sediment contribution.

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[2] Coastal Planning and Engineering (CP&E) Annual Littoral Transport: 1995-2005; Woods Hole Group Quarterly Monitoring Data; Epsilon Associates, Inc. Bluff retreat calculations Section 4.4.

[3] Sconset Bluff Stabilization Project 2021 Annual Review, Epsilon Associates, July 18, 2022

[4] Coastal Planning and Engineering (CP&E) Engineering Design Report, Sconset Beach Nourishment Project, Nantucket, Massachusetts, 2006

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1.2 Summary of Proposed Project

In 2021, Arcadis, Inc. was hired by the TON to conduct an alternatives analysis to compare technically feasible solutions for addressing bluff and toe erosion along Baxter Road. The proposed Project described in this NOI is consistent with the short- to medium-term plan to stabilize the bluff using a geotube system, coir terraces and a sacrificial dune. The Long-Term Planning Memo noted that the expansion of the existing geotube system offers an effective solution with a high level of bluff protection including protection for larger storm return periods.

The proposed project contains the following toe-protections measures: geotubes, coir terraces, and sacrificial dune. Coir terraces and sacrificial dunes are not considered to be CESs. These protection measures are customized to each "Reach" and retreat rates, and are similar to other assessment methods and treatment measures identified in the Town of Nantucket's Coastal Resilience Plan. Monitoring is also proposed to observe how the measures perform and to observe the fronting and adjacent beach. The structural measures are described below.

Geotubes:

Geotubes, or sand filled geotextile tubes, are made from a woven polypropylene geotextile fabric. Manufactured in a sand color, the geotextile fabric is woven in a rip-resistant weave pattern for maximum damage resistance. The geotubes are filled with sand and then covered with a sacrificial layer of sand (sand template). The purpose of the geotube installation is to protect the toe of the bluff from scour caused by storm waves. The geotube system will consist of four staggered layers of 45-foot circumference geotubes (approximately 6.5 feet high by 19.0 feet wide when filled in place) placed at the toe of the bluff. They will be placed to form a sloped face to minimize wave reflection. Angled return constructed of geotubes will tie the geotube face to the bluff face to reduce wave refraction and reduce flanking. Furthermore, the angled returns will aid in transitions between reaches and help facilitate transitions. The geotube system is designed for the 100-year flood event with a design life of approximately 40 - 50 years. After the geotubes are installed the sand template will be established using 22 cubic yards per linear foot ("cy/lf") of compatible sand (based on grain size) to cover the geotubes and serve as the on-site sand stockpile for compensatory sand contributed to the littoral drift system. See **Attachment I** for the detailed plans.

Coir Terraces:

Approximately 690feet coir terrace will be installed along the bluff fronting 61- 71 Baxter Road in Phase 1. The terraces will be constructed using four stacked coir fabric envelopes formed with an approximately 3-foot by 3-foot cross-section. The coir envelopes will be installed in lifts by filling the envelope with compatible sand. These coir terraces do not have specific design life and will require periodic maintenance and replacement based on observation during annual maintenance. The coir terraces require annual maintenance to replace sand and make repairs as needed. Full replacement every two- to five-years is anticipated depending on storm frequency

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and intensity. After the envelopes are installed, they will be covered with sand at a rate of 1.4 cy/lf to match the bluff sediment contribution for this reach. The sand cover will be re-placed each year to provide compensatory sand comparable to the bluff reach.

Sacrificial Dune:

Dunes provide a physical buffer between the sea and inland areas, *i.e.*, a buffer that can naturally shift (migrate, erode, and accrete) during storms. As waves hit a dune and its sediments move and shift, the wave energy is absorbed, protecting landward areas from the full brunt of the wave action. Artificial and nourished dunes augment the level of protection as a physical buffer, plus the added sediment from artificial and nourished dunes supports the littoral drift system. Sand eroded from the artificial dune during a storm is added to the surrounding beach and nearshore area (littoral reach) where it dissipates wave energy, reducing the strength of incoming storm waves. Sediment is typically added regularly to maintain dune height, width, and volume at appropriate levels to retain its protective capacity.[5]

A sacrificial dune is proposed along Reach 5, seaward of the natural dune fronting 41 to 59Baxter Road, as depicted on the Project Plans. The sacrificial dune is proposed immediately seaward of the natural dune to with the top established at elevation 15 feet NAVD 88 and the front face sloping at 3:1 (horizontal to vertical). This yields an approximately 5.5 cy/lf of sand to be placed seaward of the natural dune. The sacrificial dune will be established outside of the bird breeding season between October and March, preferably starting in the autumn, to occur after shore birds have fledged, and annual replenishment to re-establish the design cross-section will occur each autumn.

1.2.1 Project Phasing

This Project is in alignment with the Town's island-wide resilience planning efforts, thus the submission of this NOI jointly by the SBPF and the Town. It is also unique in being the first "neighborhood" resilience plan to be advanced on the Island. This plan approaches mid-term bluff stabilization as collective action by a group of concerned homeowners rather than as individuals. This cooperative effort proposed by the neighborhood and the TON is intended to increase the effectiveness of bluff protection by expanding a continuous bluff protection project, and to minimize negative impacts on neighbors. This type of neighborhood approach is expected to be increasingly necessary throughout the Island and in the future as sea level rise and climate change need to be addressed on an island-wide basis.

[5] StormSmart Properties Fact Sheet 1: Artificial Dunes and Dune Nourishment (https://www.marshfield-ma.gov/sites/g/files/vyhlif3416/f/uploads/storm_smart_properties_fact_sheet_1_dunes.pdf accessed 14 MARCH 2022)

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The proposed Project is designed by bluff reach and will be advanced in phases as summarized below. A reach can be defined as a "…*contiguous stretch of shoreline that shares a common morphological makeup with a particular profile*."[6]. Classifying a shoreline in terms of reaches is a common approach in sediment budget and shoreline studies. A more detailed description of the proposed Project is provided in Section 4.

Tipping Point Triggers and Reaches

To facilitate an approach where the project is conducted in stages based on bluff conditions and "tipping point triggers" indicating the need for a different type of protection, the bluff was divided into five "reaches". The reaches were defined based on areas of similar bluff conditions and retreat rates to more closely match the existing Coastal Bank sediment contribution rates to avoid creating areas that are either under or overprotected or contributing too much or too little sediment along a particular reach. The reaches were defined above in Section 1. **Figure 4 – Reaches and Toe Protection Types** depicts the extent of the five alongshore reaches.

Phase 1

Geotube Extension: The proposed geotube system will extend 760 feet north from the existing array to 117 Baxter Road plus 75 feet of returns, and 950 feet south to 71 Baxter Road plus 75 feet of returns. This will provide 2,740 feet of continuous protection from 71 to 117 Baxter Road. Note, the 400-foot extension fronting 109 through 117 Baxter Road will be the first priority for construction.

The bluff face will be vegetated using American beachgrass (*Ammophila breviligulata*), installed in staggered rows with plants spaced 18-inches on center, to stabilize the face of the bluff above the geotubes and prevent surface erosion. To ensure vegetation efforts are successful, a minor addition of sand is needed to prepare the planting bed prior to planting by smoothing out some of the deeper rills and gullies. The use of a biodegradable erosion control fabric or jute netting is also proposed to protect soil from wind and water erosion, and retain moisture to facilitate establishment of beachgrass. Once the beachgrass has been established, other native woody vegetation recommended by CZM will be planted in subsequent years, including: Bearberry, Beach Heather, Bayberry, and Beach Plum.

Examination of **Figure 5 – Aerial Photographs of Existing Conditions** shows that the Coastal Bank above the existing geotube system, established with beachgrass planted 18-inches on center, is evenly covered by vegetation and does not show signs of active retreat.

The sand template covering the geotubes will be established with the volume based on 22 cy/lf of sand. Annual monitoring will be conducted to determine the volume of sand eroded off the

[6] Rogers, C. M., K. A. Jacobson, and M. B. Gravens. 2009. Beach-fx User's Manual: Version 1.0. Prepared for the U.S. Army Corps of Engineers. ERDC/CH SR-09-6.

template (i.e., contributed to the littoral system) and that volume will be replaced prior to the next winter storm season, i.e., an adaptive sand management program. Unprotected bluff retreat and contribution rates are present by reach in Table 1 below.

Coir Terraces: Coir terraces are proposed along the toe of the bluff in Reach 4, from 61to 71 Baxter Road as an interim toe protection measure until a sustainable sand source is approved. The coir terrace system will begin at the southern edge of the proposed geotube ending at 71 Baxter Road, and extend approximately 690feet south to 61Baxter Road, ending where the dune begins. The coir terraces in this area will be covered with 1.4 cy/lf of sand before each winter storm season.

Dune Monitoring: Reach 5 will be monitored yearly to assess the dune and track any migration of the dune southward.

Phase 2

Geotube Extension: The coir terraces in Reach 4 will be replaced with a geotube system. The geotubes will be installed and maintained the same way as described in Phase 1. Reach 4 currently meets the criteria for progression to geotube protection, but the Applicants acknowledges that sand is a limited resource on Nantucket, thus progression to Phase 2 includes identifying and securing a sustainable sand source.

Sacrificial Dune: Sand will be placed annually along Reach 5 in front to the dune, i.e., a sacrificial dune, to augment dune volume and to slow its loss and protect the toe of the adjacent Coastal Bank. The sacrificial dune will be established with 5.5 cy/lf of sand, and 5.5 cy/lf will be placed each autumn thereafter before the winter storm season.

Future Phases

Coir Terraces: Sacrificial dune sand placement will be replaced with coir terraces and a sand template. The tipping point trigger to switch from sacrificial dune to coir terraces is the permanent loss of the natural dune at the toe of the bluff. Permanent loss is defined as the loss of Coastal Dune for three consecutive years based on annual surveys.

Geotube Extension: The coir terraces will be replaced with the geotube system. The tipping point trigger to switch from coir terraces to geotubes is when the toe of bluff erosion and mid-slope erosion / failure is observed even with coir terraces in place.

1.2.2 Procedures for Phase Progression

Monitoring is proposed to document conditions along the slope. When monitoring documents that initial toe protection measures are not stabilizing the bluff then the level of protection will progress to the next, more substantial measure. This is described below.

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Coir Terraces to Geotubes:

- Toe of bank erosion is occurring even with coir terraces in place and being properly maintained;
- Mid- or upper-slope failure is documented even with coir terraces in place and properly maintained; and
- Adequate sand source(s) secured and available to construct and maintain the geotubes pursuant to the adaptive sand management protocol.

The Natural Resource Director, Conservation Commission Agent, or their designee, will conduct a site visit, concur the above criteria have been met, and notify the Commission in writing that the criteria are met before providing administrative approval on behalf of the Conservation Commission, as confirmed as viable, to progress from coir terraces to geotube toe protection.

Dune Nourishment to Coir Terraces:

This section applies to Reach 5 and will include procedures for phased progression in Reach 5.

- The northern margin of the dune has been permanently eroded even with annual dune nourishment. Permanent loss is documented by 3 consecutive annual coastal dune inspections documenting the loss;
- The permanent loss is confirmed via a site inspection by the natural Resources Director, Conservation Commission or their designee; and
- Adequate sand source(s) secured and available to construct and maintain the coir terraces.

The Natural Resource Director, Conservation Commission Agent, or their designee, will conduct a site visit, concur the above criteria have been met, and notify the Commission in writing that the criteria are met before providing administrative approval on behalf of the Conservation Commission, as confirmed as viable, to progress from dune nourishment to coir terraces.

1.2.3 Adaptive Compensatory Sand Placement

For the full-length Project, including the existing geotube array, SBPF proposes an adaptive compensatory sand program that recognizes that not all of the sand is moving off the template each year. The proposed sand compensation plan is to ensure that the full 22 cy/lf of sand is on the in-place geotube template prior to the start of the winter storm season each fall. Each time the seaward portion of the sand cover washes off the geotube array during erosion events, as designed, the sand template will be re-graded after the erosion event (sand from the top will be pushed down to re-cover exposed geotubes) so that the seaward face of the geotextile tubes remain covered and sand is available to the littoral system during the subsequent erosion event. Each following year (prior to the start of the winter storm season), the volume of sand needed to refill the sand template to 22 cy/lf will be determined by conducting a template survey at the end

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of the second quarter ("Q2") to determine the sand volume atop the geotubes. The difference of the "full" template (i.e., 22 cy/lf) and the surveyed template volume yields the sand contributed to the littoral drift system. The difference will be placed to "refill" the template. Additional information regarding sand volume calculations and the adaptive sand management program are presented in Sections 4.4 and 4.5 below. Therefore 22 cy/lf will always be available on the geotube template at the start of each winter season.

The above proposed adaptive compensatory sand plan is offered by the applicant as an alternative measure of conservatism and safety. The Commission should note that the Applicant is willing to accept a simple sand measurement but proposed the above plan based on the varied conditions on each Reach.

1.2.4 Monitoring

The Applicants propose a comprehensive monitoring program that differs slightly from the monitoring program for the Pilot Project geotube system based on knowledge gained and lessons learned from the current program. Proposed monitoring includes: aerial bank monitoring annually to assess bank volume change and the volume of sand remaining in the geotube template; shoreline surveys four times a year during the first year following construction and twice a year thereafter; bathymetric surveys once per year to characterize regional morphology; and underwater video monitoring once every three years.

2.0 Project Purpose and Need

2.1 Existing Conditions at Sconset Bluff

The Coastal Bank along the southeast Nantucket coast, known locally as the Sconset Bluff, is an active coastal erosion area because: (1) it is comprised of glacial deposits – mostly sand with gravel and clays also present and laid down as an outwash plain at the southern end of the Laurentide Ice Sheet, and (2) of its exposure to Nor'easter storms, see **Figures 1 and 2**. Erosion of the bluff began in the 1970s and has progressed from north (near the Sankaty Head Lighthouse) to south (beyond Bayberry Lane) with the loss of fronting Coastal Dune accelerating the Coastal Bank erosion rate. See **Figure 6 – Coastal Bluff Retreat 1994-2021**. North of Bayberry Lane, Baxter Road provides the sole means of access to numerous pre-1978 homes (see **Figure 7 – Pre 1978 House Status**) and the historic Sankaty Head Lighthouse, a treasured landmark and recreational area on Nantucket which is listed on the National Register of Historic Places.

Ongoing erosion of Sconset Bluff has resulted in continued decrease in the setback distance between the top of Sconset Bluff and the numerous pre-1978 homes, Baxter Road, and public infrastructure in Baxter Road located at the top of the bluff. During the winter storms of 2012-2013, significant retreat of the Sconset Bluff occurred, leaving the top of the bank as close as 31- to 46-feet to the edge of Baxter Road in several areas and only 60- to 70-feet in many others. Pre-1978 homes in the Project area remain as close as 2-feet from the top of the bank based on 2021 aerial surveys, which are accurate within a range of 5 centimeters or less. See **Figure 8 – Setback Survey**.

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As a result of the eroding bluff, Baxter Road and the homes and public infrastructure therein are in danger of damage or loss. Another storm season similar to 2012-2013, or indeed a single significant storm, could render portions of Baxter Road impassable, breach the public water supply and sanitary sewer, and leave the residences at the north end of Baxter Road isolated. A breach of the sanitary sewer system would impact public health, the public beach, and water quality. The failure of Baxter Road also would leave the Town unable to provide fire protection, safe drinking water, or sanitary services to the residents and would cut off access to the Sankaty Head Lighthouse. The existing geotube system performed well during the late winter storms in March 2018.[7] During that storm season no bank retreat was observed where the existing pilot project system is in place. However, erosion was documented along the unprotected reaches of the bluff within the proposed Project footprint.

In 2015, the Commission issued an OOC SE48-2824. Contained in that OOC is a "findings of fact" that the Commission previously determined the bluff was eroding, that the existing pilot project would protect pre-1978 houses, and that houses and infrastructure were in danger. The following findings were previously prepared by the Commission.

10. *The Commission recognizes that the coastal bank is subject to significant erosion due to wave action, overland storm water erosion and groundwater flow/discharge.*

12. *The Commission finds that the Project is proposed to protect pre-1978 buildings and essential public infrastructure providing access and utilities for such.*

14. *The Commission finds that these dwellings and infrastructure are in danger, due to erosion of the coastal bank.*

2.2 Coastal Bank Retreat Rate

For the proposed Project, top of Coastal Bank retreat is observed from 71 to 119 Baxter Road. The top of Coastal Bank retreat rate was determined for the bluff from 71 – 87 Baxter Road and 105 – 119 Baxter Road, for the period of 1994 to 2022. The portion of the bluff protected by the pilot project has not retreated since the installation of the geotubes, thus the top of Coastal Bank retreat rate was not re-calculated for this approximately 950-foot long segment. The retreat rate was determined using the top of Coastal Bank retreat distance along transects perpendicular to the bluff spaced every 10 feet along the top of the bluff. Using GIS, the top of Coastal Bank was delineated from commercially available 1994 LiDAR data as well as project-specific 2022 LiDAR surveys (from the June 2022 aerial survey) to determine the total retreat over this 28-year period. As shown below in **Table 1: Coastal Bank Retreat Rate by Reach**, the length weighted annual average retreat rate for the measurable bluff length (exclusive of the pilot project reach) is 2.1 ft/yr. This number is significantly less than the length weighted annual average annual bank

[7] 19,541 cy of sand was contributed off the template into the littoral system during the 2018 Sand Year. Similarly the 2018 Sand Year was the peak contribution year from the nearby unprotected bluff. Demonstrating the template is managed and responds to conditions similar to the unprotected bluff reaches.

retreat of 4.6 ft/yr that was calculated prior to the pilot project for the stretch of Coastal Bank that is currently protected by the pilot project. At the time, this was the bluff segment with the highest retreat rate in the Project area and thus was selected for the pilot project to protect Baxter Road from storm damage.

While the table below presents data to document Coastal Bank retreat rates, **Figure 5** depicts an oblique aerial photo of the Project, in which active erosional areas are observed. Additionally, three cross-sections comparing the 2022 and 1994 bluff are presented in **Attachment I – Project Plans**. Even in areas where the Coastal Bank supports vegetation and has coir terrace toe protection, slope failure is observed along the mid-slope. Therefore, a comprehensive Coastal Bank stabilization plan is needed along the entire stretch of the bluff to protect the pre-1978 houses, the road and public infrastructure serving those houses.

Table 1 Coastal Bank Retreat Rate by Reach

Reach	Transects			Lots			Average Retreat Length 1994-2022 (Feet)	Total Transect Length (Feet)	Average Retreat Rate (ft/yr)
REACH 1	1	to	60	109	to	119	51.4	600	1.8
REACH 2: North	61	to	86	107A	to	105	79.3	260	2.8
REACH 2	87	to	178	87	to	105	Protected by Current Geotubes		
REACH 2: South	179	to	208	85	to	87	99.5	300	3.6
REACH 3	209	to	274	71	to	83	44.0	660	1.6
REACH 4	275	to	279	61*	to	71	15.6	50	0.6
AVERAGE OF REACHES 1-4 UNPROTECTED AREA							59.4	1,860	2.1

Note: While Reach 4 extends from 61-71 Baxter Road, only lot 71 (transects 275 – 278) is experiencing measurable top of Coastal Bank retreat. Therefore, based on best practices, the transects 275-278 retreat rate is extended along the entire reach. Reach 5 currently includes a narrow Coastal Dune and is not experiencing measurable top of Coastal Bank retreat.

2.3 Sea Level Rise and Adaptation

Currently none of the buildings in the project area are within the 100-year floodplain since they are located along the top of the elevated Coastal Bank. The 2019 FEMA Coastal Erosion Hazard Maps provide data for erosion risk to Nantucket for multiple sea level rise ("SLR") scenarios, assuming no shoreline protection is implemented. These data, as shown in **Figure 9 – FEMA Coastal Erosion Hazard Map**, indicate risk of loss of buildings and public infrastructure in this area as soon as 2030 due to erosion calculations that included bank composition data and wave runup models. FEMA's analysis to determine these predictions was performed first by using shoreline and bluff edge data as far back as 1846 and up to 2010 to develop a linear regression rate for erosion. These data were used to create projected erosion rates that were then were modified by

a sea level rise increase factor. These projections depict the top of bluff for future years – 2030, 2050, 2100 – without shoreline protection measures such as toe protection or nourishment activities proposed herein.

2.4 Project Eligible for Protection by a CES

2.4.1 Imminent Danger to Houses and Public Infrastructure

Coastal storms during the winter of 2012-2013 caused dramatic erosion on Sconset Bluff. When entering the 2013 MOU with SBPF to protect Sconset Bluff, the TON concluded 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… [and] an emergency exists that threatens public roads and other assets from imminent destruction…"

Indeed, on October 9, 2013, in an amendment to the MOU, the Town identified

"… 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 … and there is an emergency need for an emergency response action plan outlining how the Town will provide emergency vehicular access, water supply and sanitary services 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…"

Thus, the Town's engineering consultant clearly stated that there was a threat of imminent danger to public infrastructure and homes.

Conditions have not improved for the unprotected stretches of the Coastal Bank, and pre-1978 homes remain as close as 2-feet from the top of the Coastal Bank based on 2021 surveys (**Figure 8**). As shown in Table 1, the distance weighted average Coastal Bank retreat rate for the unprotected areas of Reaches 1 to 4 is approximately 2.1 feet per year ("ft/yr"). Thus, those homes close to the top of the bank are threatened with loss or significant damage by Coastal Bank retreat.

For the 2015 NOI (DEP File No. SE48-2610) an analysis of the single year erosion that occurred between 2012 – 2013 was conducted by delineating the top of Coastal Bank from 2012 and 2013 aerial photographs and then calculating retreat distances along shore-perpendicular transects spaced every 20 feet. That analysis indicated that the average erosion in the area from 85-107A Baxter Road was 20 feet and ranged up to 40 feet. The maximum single-season erosion rate of 40 feet was then used as the basis of the criteria for those homes and sections of roadway that required immediate protection.

- All homes within 40 feet of the top of the coastal bank require immediate protection.

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- All sections of Baxter Road within 65 feet of the top of the Coastal Bank require immediate protection.

This 65-foot distance was based upon the sum of the potential single-season erosion (40 feet) plus the minimum distance of 25 feet that needs to be maintained seaward of the Baxter Road pavement for structural stability of the roadway. The 25-foot distance is based upon recommendation from the geotechnical engineering firm Haley & Aldrich[8], who indicated that the Town could maintain travel on Baxter Road until such time as the top of the bluff is 25 feet or less from the edge of pavement. When the top of the bluff is within 25 feet of the pavement edge, the road should be closed to traffic until a detailed assessment can be completed by a geotechnical engineer.

Figure 8 depicts house setbacks for lots 41 to 119 Baxter Road based on 2021 aerial photos. Of the 13 houses in the proposed geotube extension area (lots 71 to 117), eight are in imminent danger, *i.e.*, within 40 feet of the top of the bank. See **Figure 6** which depicts the dire conditions at 109 Baxter Road. Most homes have been moved landward, towards the road, due to the imminent danger and have no future option for further retreat. Additionally, the roadway setbacks at lots 85 – 119, all meet the Town established criteria of being in imminent danger, *i.e.*, within 65 feet of the top of the Coastal Bank.

2.4.2 Protecting Pre-1978 Buildings

Issuance of the SOC for the previous extension project (SE48-2824) by the MassDEP affirmed the eligibility of protecting existing homes by a CES as pre-1978[9] protected homes. The assessment provided herein demonstrates that each building proposed for protection by the geotube system in Reaches 1 – 4 (houses 61 – 117 Baxter Road) along the east side of Baxter Road are eligible for protection by a CES pursuant to both the Bylaw standards and the WPA standards for work on a Coastal Bank. This eligibility also applies to future phases, south of 61 Baxter except for 41 Baxter Road which appears to be a post-1978 building.

The WPA regulations at 310 CMR 10.30 present the State's performance standards for work on a Coastal Bank. 310 CMR 10.30(3) reads in part:

> "*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*

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8 As described in the November 8, 2013 letter from Malone & MacBroom to the Nantucket Department of Public Works.

9 Pre-1978 buildings are those "… 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 …" [310 CMR 10.30(3)]

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: …"

As identified in materials in the record, and summarized in **Table 2: Pre 1978 Homes** below and shown on **Figure 7**, all but one (41 Baxter Road) of the existing homes in the proposed geotube extension area are pre-1978 buildings, and thus eligible for protection by a CES. Vacant lots between pre-1978 buildings qualify as "gap lots" and are eligible for installation of the CES to provide continuous toe protection, as described below in Section 2.4.3.

The Bylaw regulations at 2.05 presents the [Town's] performance standards for work on a Coastal Bank. 2.05 B. 1 reads:

"*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. Bulkheads and groins may be rebuilt only if the Commission determines there is no environmentally better way to control an erosion problem, including in appropriate cases the moving of the threatened buildings and/or public infrastructure. 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*."

Please note, the clause disallowing eligibility of structures substantially approved after 8/78 first appeared in the Bylaw regulations effective April 20, 2005 –as best we can tell from research of our files– we seek concurrence from the Town to provide the effective date of this provision. The substantial improvement cannot be applied retroactively and therefore it only applies to substantial improvements completed after the effective date of that standard, i.e., April 2005 Given the timing of this clause, all but one (41 Baxter Road) of the homes on the east side of Baxter Road in the geotube Project area are eligible for protection by a CES because all the home except 41 Baxter Road are pre-78 buildings, and improvements made to pre-78 homes since 2005 have been less than a 20% increase in habitable space. As noticed by review of Table 2, most improvements were made prior the effective date of this clause. Home rebuilds at 69 and 81 Baxter Road were constructed in 1994 and 1996 respectively, and therefore pre-date that requirement, making those home eligible for protection by a CES. An analysis of the homes in the Project area and review of building permits for each is presented in **Attachment E – Costal Engineering Structure Protection Qualifications.**

The WPA and Bylaw standards are basically the same, the Bylaw differs from the WPA in the following ways:

Buildings – The WPA allows the construction of a CES to protect buildings [310 CMR 10.30(3)]

Infrastructure – the Bylaw allows the construction of a CES to protect public infrastructure (roads, water, sewer, electric, gas, etc.). [2.05 B. 1.], while the WPA standard limits protection to buildings

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Structures – the Bylaw allows the construction of a CES to protect structures, while the WPA standard limits protection to buildings. [2.05 B. 1.]

Pre-1978 Buildings & Structures – The WPA allows construction of a CES to protect buildings that were constructed prior to the effective date of the WPA coastal regulations (August 10, 1978) [310 CMR 10.30(3)]. The Bylaw likewise allows construction of CES to protect structure and infrastructure constructed prior to August 1978, except structures substantially improved after April 2005 (the date that provision was added to the Bylaw regulations). [2.05 B. 1.]

Substantial Improvement – This is defined in the Bylaw regulations as cumulative expansion of habitable space greater than twenty percent (20%). [1.02]

Table 2 attached presents a summary for each lot based on the criteria used to assess CES projects to protect Coastal Banks pursuant to the Bylaw and the WPA. Short assessments for each lot in the project area to flesh out the information presented in Table 2 are presented in **Attachment E**.

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Table 2 **Pre 1978 Home Status**

House No.	Qualifications for Protection by a Coastal Engineering Structure										Annual Sand Contribution Volume (by Segment)					
	Coastal Dune Fronting Lot	Coastal Bank Eroding	Coastal Bank Vegetated	Coastal Bank Protects Public Infrastructure[1]	Lot Contains a Pre-78 Structure	Distance of Top of Coastal Bank from House or Road[2]	Structures Improved Since 2005[2]	Improvements are " Substantial Improvements" [3]	House Previously Re-Located Away from Bluff	Available Space On-Site to Re-Locate House	Annual Retreat Rate (by Reach) (ft/yr)	Time Period for Calculated Retreat Rate (yrs)	Annual Sand Volume Required by DEP & CZM Policy (cy/lf/yr)	Full Template Volume (cy/lf)	Years of Storage Volume in Full Template[4]	Conclusion – Eligible Y / N
119 (Vacant)	N	Y	N	Y	N	**63 feet to street**	NA	NA	Y	NA	2.1	23	6.8	22	3.2	N
117	N	Y	N	Y	Y (moved from 115)	**32 feet to house**	Y	N	Y	N	2.1	23	6.8	22	3.2	Y
115 (Vacant)	N	Y	N	Y	N	**61 feet to street**	NA	NA	Y	NA	2.1	23	6.8	22	3.2	Y
113	N	Y	N	N	Y (1940)	**19 feet to house**	N	N	Y (1988)	N	2.1	23	6.8	22	3.2	Y
109	N	Y	N	N	Y (1940)	**15 feet to house**	N	N	Y (1988)	N	2.1	23	6.8	22	3.2	Y
107A (Vacant)	N	Y	N	Y	N	**56 feet to street**	NA	N	NA	NA	2.1	23	6.8	22	3.2	Y
107 (Vacant)	N	Y	N	Y	N	**51 feet to street**	NA	N	NA	NA	2.1	23	6.8	22	3.2	Y
105 (Vacant)	N	N	Y	Y	N	**32 feet to street**	NA	N	Y (1998)	NA	3.5	19	12.1	22	2.1	Y
101 (Vacant)	N	N	Y	Y	N	**31 feet to street**	NA	N	Y (2001)	NA	NA	19	12.1	22	NA	Y
99	N	N	Y	Y	Y	**14 feet to house**	N	N	Y (2005)	N	NA	19	12.1	22	NA	Y
97	N	N	Y	N	Y (1940)	**12 feet to house**	Y	N	Y (1988)	N	NA	19	12.1	22	NA	Y

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Table 2 **Pre 1978 Home Status (Continued)**

House No.	Qualifications for Protection by a Coastal Engineering Structure										Annual Sand Contribution Volume (by Segment)					
	Coastal Dune Fronting Lot	Coastal Bank Eroding	Coastal Bank Vegetated	Coastal Bank Protects Public Infrastructure[1]	Lot Contains a Pre-78 Structure	Distance of Top of Coastal Bank from House or Road[2]	Structures Improved Since 2005[2]	Improvements are " Substantial Improvements" [3]	House Previously Re-Located Away from Bluff	Available Space On-Site to Re-Locate House	Annual Retreat Rate (by Reach) (ft/yr)	Time Period for Calculated Retreat Rate (yrs)	Annual Sand Volume Required by DEP & CZM Policy (cy/lf/yr)	Full Template Volume (cy/lf)	Years of Storage Volume in Full Template[4]	Conclusion – Eligible Y / N
93	N	N	Y	N	Y (1950/51)	**2 feet to house**	Y	N	Y (2020)	N	NA	19	12.1	22	NA	Y
91 (Vacant)	N	N	Y	Y	N	**56 feet to street**	N	N	NA	NA	NA	19	12.1	22	NA	Y
87 (Vacant)	N	N	Y	Y	Y (1976)	**53 feet to street**	Y	N	Y (2007, demolished 2013)	NA	3.6	19	12.1	22	2.4	Y
85 (Vacant)	N	Y	N	Y	N	**46 feet to street**	NA	NA	NA	NA	3.6	19	12.1	22	2.4	Y
83	N	Y	P	Y	Y (1940)	**22 feet to house**	N	N	Y (2001)	N	1.6	14	7.1	22	5.5	Y
81	N	Y	P	N	Y (1923) new house 1994	56 feet to house	N	N	Y (1993)	N	1.6	14	7.1	22	5.5	Y
79	N	Y	P	N	Y (1916 / 1923)	46 feet to house	N	N	Y (1916/23, demolished 1993)	N	1.6	14	7.1	22	5.5	Y
77	N	Y	P	N	Y (1940)	71 feet to house	Y	N	Y (2006)	N	1.6	14	7.1	22	5.5	Y
75	N	Y	P	N	Y (1922 / 1923)	**39 feet to house**	Y	N	Y	N	1.6	14	7.1	22	5.5	Y
73	N	Y	P	N	Y (1920)	61 feet to house	Y	N	Y (2012)	N	1.6	14	7.1	22	5.5	Y

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Table 2 Pre 1978 Home Status (Continued)

House No.	Qualifications for Protection by a Coastal Engineering Structure										Annual Sand Contribution Volume (by Segment)					
	Coastal Dune Fronting Lot	Coastal Bank Eroding	Coastal Bank Vegetated	Coastal Bank Protects Public Infrastructure[1]	Lot Contains a Pre-78 Structure	Distance of Top of Coastal Bank from House or Road[2]	Structures Improved Since 2005[2]	Improvements are " Substantial Improvements" [3]	House Previously Re-Located Away from Bluff	Available Space On-Site to Re-Locate House	Annual Retreat Rate (by Reach) (ft/yr)	Time Period for Calculated Retreat Rate (yrs)	Annual Sand Volume Required by DEP & CZM Policy (cy/lf/yr)	Full Template Volume (cy/lf)	Years of Storage Volume in Full Template[4]	Conclusion – Eligible Y / N
71	N	Y	P	N	Y (1932 / 1939)	68 feet to house	Y	N	Y (2012)	N	0.6	14	7.1	22	14.7	Y
69	N	Y	P	N	Y (1940) new house 1996	41 feet to house	N	N	Y (1940, moved off lot 1997)	Y (± 38 ft)	NA	14	2.3	22	NA	Y
67	N	Y	P	N	Y (1930)	48 feet to house	N	N	Y (2002)	Y (± 53 ft)	NA	14	2.3	22	NA	Y
65	N	Y	P	N	Y (1985)	**34 feet to house**	N	N	N	Y (± 60 ft)	NA	14	2.3	22	NA	Y
63	N	Y	P	N	Y (1890 / 1892)	**32 feet to house**	N	N	N	Y	NA	14	2.3	22	NA	Y
61	N	Y	P	N	Y (1893 / 1894)	66 feet to house	N	N	N	N	NA	14	2.3	22	NA	Y
59	Y	N	Y	N	Y (1905 / 1923)	55 feet to house	Y	N	N	N	NA	0	NA	22	NA	Y
55	Y	N	Y	N	Y (1890)	**28 feet to house**	N	N	Y (1998)	N	NA	0	NA	22	NA	Y
53	Y	N	Y	N	Y (1930)	44 feet to house	Y	N	N	N	NA	0	NA	22	NA	Y
51	Y	N	Y	N	Y (1887)	52 feet to house	Y	N	Y (2016)	N	NA	0	NA	22	NA	Y

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Table 2 Pre 1978 Home Status (Continued)

House No.	Qualifications for Protection by a Coastal Engineering Structure										Annual Sand Contribution Volume (by Segment)					
	Coastal Dune Fronting Lot	Coastal Bank Eroding	Coastal Bank Vegetated	Coastal Bank Protects Public Infrastructure[1]	Lot Contains a Pre-78 Structure	Distance of Top of Coastal Bank from House or Road[2]	Structures Improved Since 2005[2]	Improvements are " Substantial Improvements" [3]	House Previously Re-Located Away from Bluff	Available Space On-Site to Re-Locate House	Annual Retreat Rate (by Reach) (ft/yr)	Time Period for Calculated Retreat Rate (yrs)	Annual Sand Volume Required by DEP & CZM Policy (cy/lf/yr)	Full Template Volume (cy/lf)	Years of Storage Volume in Full Template[4]	Conclusion – Eligible Y / N
49	Y	N	Y	N	Y (1886)	**25 feet to house**	N	N	N	N	NA	0	NA	22	NA	Y
47	Y	N	Y	N	Y (1886)	42 feet to house	N	N	N	N	NA	0	NA	22	NA	Y
45	Y	N	Y	N	Y (1930)	64 feet to house	Y	N	N	N	NA	0	NA	22	NA	Y
41	Y	N	Y	N	N (1979)	**40 feet to house**	Y	N	N	N	NA	0	NA	22	NA	N

Legend / Notes:

Shaded lots are location of existing geotube system

Y = Yes, N = No, NA = Not Applicable, P = Partial

BOLD indicates setback meets imminent threat criteria (defined as 40 feet from top of Coastal Bank for houses; 65 feet from top of Coastal Bank for Baxter Road)

1. Pursuant to the By-Law Regulations a CES is allowed to protect public infrastructure from loss or damage by floodwaters [Bylaw Section 2.5].
2. Distance from top of bank is the closest point on each lot of the roadway or foundation/permanent structural element to the top of the bank.
3. Pursuant to Bylaw Regulations and state regulations, a CES is allows to protect structures / buildings constructed adjacent to the Coastal Bank before August 1978 (date when state regulations became effective). Bylaw Regulations prevent use of CES to protect pre-1978 structures that were substantially improved. The Substantially improved clause was added to the Bylaw regulation in 2005. Substantial Improvement is defined in the Bylaw Regulations as cumulative expansion of habitable space greater than twenty percent (20%). [1.02]
4. Calculated by dividing the full template volume (22 cy/lf) by the required annual sand contribution (varies cy/lf/yr)

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2.4.3 Gap Lots

This section provides clarification on gap lots, or gap projects, associated with the proposed Project. A gap lot is either a vacant waterfront lot or a waterfront lot with a post-1978 structure (or building) sandwiched between lots with pre-1978 waterfront lots and/or lots with existing coastal engineering structures.

There are no adjudicatory decisions issued pursuant to the Act nor is there any MassDEP written guidance to define gap lots. However, review of past project decisions identified two types of gap lots:

1. Approvable gap lot which protect abutting lots with pre-1978 buildings with a waterfront frontage distance needed to protect pre-78 buildings in adjacent waterfront lots.
2. Non-approvable gap lot(s) which propose too long a waterfront frontage distance to be justified as protecting abutting lots with pre-1978 structures.

MassDEP Input on Gap Lots

Epsilon previously contacted Jim Mahala, the then MassDEP Section Chief of the Wetlands and Waterways staff for the Southeast Regional Office ("SERO"). Mr. Mahala indicated that MassDEP has not issued any written guidance on gap lot projects. He also stated there have been no WPA adjudicatory decisions that provided guidance to MassDEP on these projects.

Epsilon independently conducted a search of MassDEP adjudicatory cases through the Landlaw, Inc.[10] and found no adjudicatory decisions on this subject. This research corroborates Mr. Mahala's comments on this matter.

Approved Gap Lot Projects

Because there have been no MassDEP adjudicatory decisions on this matter, that means these projects have been approved at the local level via OOCs, or if appealed, decisions were made by the MassDEP regional office via a SOC. Researching those de-centralized files would be a daunting task. Through our contact with MassDEP staff and our own research of MassDEP files, we identified several precedent gap lot projects, in addition to the precedent established by the Existing Baxter Road and Sconset Bluff Storm Damage Prevention Project (SE48-2824 and SE48-2610).

Mashpee

MassDEP identified an older gap project in Mashpee, MA that has been a long-standing example of an approved gap project. This was a project located on lots 528 and 527 Triton Way (house numbers 10 and 16 Triton Way, respectively) for which the Massachusetts Department of

[10] https://www.landlaw.com/index.asp

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Environmental Quality Engineering ("DEQE") [predecessor to the MassDEP] issued a Final OOC in January 1989 (DEQE File No. SE43 – 604) which authorized a CES across vacant lots. The length of the CES was approximately 300 fee– and this frontage length was deemed acceptable to the DEQE in terms of extending the CES to form a continuous shoreline protection barrier to protect existing buildings. We note, that the Final OOC references the "vacant bank" in Special Condition #23, and a review of the Mashpee Assessor's files indicates the houses on both 10 and 16 Triton Way were constructed in 1996 and 1995, respectively.

Hull

Our research identified a recently approved CES fronting post-78 dwellings on Marina Drive, Spinnaker Island in Hull, MA (DEP File No. SE35-1451) and the OOC specifically identified this as a "gap project."

The project involved constructing a 136-foot-long rock revetment to stabilize this unprotected reach of Coastal Bank, because the eroding Coastal Bank was threatening to damage, or to cause the loss of, adjacent post-1978 homes. This reach of shoreline lacked any protection and exhibited erosion. The OOC allowed construction of this 136-foot long CES to establish a continuous revetment (i.e., close the gap in the revetment) along the north side of Spinnaker Island to protect the adjacent post-1978 buildings from storm damage. This OOC was not appealed by the MassDEP and remains a valid "gap project" OOC.

Eastham

Our research identified an approved CES fronting pre-78 buildings on Sunset Lane Eastham, Massachusetts (DEP File No. SE19-1702) issued in December, 2017.

The project involved constructing an approximately 99-foot long rock revetment across 25 Sunset Lane to protect pre-1978 houses on 15 and 45 Sunset Lane. This reach of shoreline exhibited erosion, and that OOC allowed construction of the CES to establish a continuous revetment (i.e., close the gap in the revetment) along the shoreline to protect the adjacent pre-1978 buildings from storm damage. This OOC was not appealed by the MassDEP.

Denied Gap Lot Project

MassDEP recently denied a CES extension along Menotomy Road, Plymouth, Massachusetts (EEA No. 15998). The original NOI sought to extend an existing CES by constructing a 505-foot rock revetment north to protect four dwellings – the two northern-most pre-1978 dwellings at 95 and 99 Menotomy Road, and the southern-most pre-1978 dwelling at 75 Menotomy Road, plus one post-1978 dwelling on lots 83, 87 & 93 Menotomy Road. The project received an OOC from the Plymouth Conservation Commission, but it was appealed by the MassDEP (to itself). DEP issued an SOC denying the gap lot portion of the project. From review of the record, we understand that the SOC only allowed the coastal engineering structure to protect the pre-1978 homes. DEP

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suggested the post-1978 home at 83, 87, & 93 Menotomy Road instead consider a cobble berm. A NOI for a cobble berm was filed with the Plymouth Conservation Commission and approved in January 2021.

A few items to note in the MassDEP comment letter on the ENF are:

1. MassDEP agreed with the Office of Coastal Zone Management ("CZM") that sand nourishment should be based on the loss of sand from the entire Coastal Bank face;
2. MassDEP suggested that the proponents consider adding a jetty or groin to the project to accumulate sand on the fronting beach; and
3. MassDEP stated that project details can be finalized in an adjudicatory hearing or Final OOC, suggesting the MassDEP will approve the project presented in the ENF.

Precedents as Related to the Proposed Project Gap Lots

The proposed Project includes two "gap lots" in terms of the WPA Regulations and those are:

1. an approximately 340-foot extension south from the existing geotube system across a public access way and 85 Baxter Road to protect pre-78 dwellings to the south, and
2. an approximately 300-foot extension north from the existing geotube system across a public access way and 107/107A Baxter Road to protect pre-78 dwellings to the north.

Conclusion

The conclusion drawn from the review of example gap projects noted above, is that the gap lots in the proposed Project footprint can be permitted through the WPA Regulations because they are consistent with the precedents noted above. In summary, those consistencies include the following:

- The geotube system extensions are needed to construct and maintain a continuous shoreline protection barrier across vacant lots at 85 Baxter Road and 107/107A Baxter Road to protect pre 1978 dwellings abutting the gap.
- The lengths of both extensions are in the in the order of 300 feet, a length that appears to be acceptable to MassDEP as a "gap project."
- Spanning the geotube system across these gaps is needed to ensure there is a continuous shoreline protection to avoid weak points in which the Coastal Bank would continue to erode and therefore impair the structural integrity of the Expanded Project and put the abutting pre-1978 dwellings at risk for loss or damage by coastal storms.
- Spanning these gaps establishes a continuous length of geotube system, which by definition includes the sand template. This facilitates the sand template maintenance and post-storm erosion repair in a timely manner, consistent with the OOC conditions.

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The correlation of the precedents to the Project demonstrate the proposed Project as depicted on the project plans is allowable under the WPA Regulations. Furthermore, the MassDEP issued a SOC for the previous extension project proposal (SE48-3115) inclusive of these same gaps.

3.0 Existing Conditions

The Project area is located on private and Town-owned land along Sconset Bluff on the eastern shore of Nantucket Island. Sconset Bluff is a steep, actively-eroding Coastal Bank (and referred herein as "Bank," "bluff" or "Coastal Bank") fronted by a steep, medium to coarse-grained Coastal Beach. Throughout most of the Project area, the Bank exhibits evidence of erosion primarily because of storm waves eroding the toe of the Bank (**Figure 5**). As shown on **Figure 6**, erosion has progressed as far south as 71 Baxter Road.

A number of residential buildings (private homes) along the eastern side of baxter Road lie immediately landward of the top of the eroding Coastal Bank. Likewise, public infrastructure (Baxter Road) is threatened by Bank erosion. Baxter Road is a public way and the only point of access to the historic Sankaty Lighthouse, as well as access for the public, residents, and emergency vehicles to more than 100 homes. Various utilities (water, sewer, communication and electric services) are located in the Baxter Road right-of-way. The Bank also includes a public access way and Town land at the base that is being lost as the Bank recedes. The public access way is the Sconset Footpath, informally known as the Bluff Walk, which historically existed from Sconset Village to the Lighthouse (and likely even extended as far north as Sesachacha Pond prior to erection of the Lighthouse in 1849)[11]. Those portions of the Bluff Walk located north of 69 Baxter Road have been lost to ongoing erosion, and a "Closed" sign has been placed at 69 Baxter Road to indicate the end of the Bluff Walk.

3.1 Houses and Public Infrastructure in the Project Area

The Project area includes multiple historic homes, as detailed in Table 2 above. Many of the threatened homes have significant historical value12 and, as such, form the core of a culturally and architecturally important historic community. They also represent a significant financial contribution to the Town of Nantucket via taxes paid. Were they to be lost, taxes on the remainder of Nantucket's taxpayers would have to be raised accordingly.

Figure 7 shows which homes were built prior to 1978 and is based on the information in Table 2 above.

A discussion of the existing homes is presented in Section 2.4 above.

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[11] "Report of the Sconset Foot-path Public Access Subcommittee of the Roads and Rights of Way Committee," 2010, page 14.

[12] Nantucket Preservation Trust. 2007. 'Sconset Historic Site Survey.

Public infrastructure at the site includes Baxter Road itself, along with associated water, sewer, communication, and electric service lines located within the right-of-way.

3.2 Natural Resources at the Site

Work associated with the Project will be located in the following coastal wetland resource areas on the Sconset shoreline that are subject to the jurisdiction of the Commission pursuant to the WPA and state Regulations, and the local Bylaw and local Regulations:

- Coastal Beach;
- Coastal Dune;
- Coastal Bank; and
- Land Subject to Coastal Storm Flowage ("LSCSF").

The limits of wetland resource areas are depicted on: **Figure 10 – Wetland Resource Areas, Figure 11 – FEMA Flood Zones, Figure 12 – Coastal Dune Delineation**, and on the Project Plans in **Attachment I**.

3.2.1 Coastal Beach

Coastal Beach is defined in 310 CMR 10.27 as *"…unconsolidated sediment subject to wave, tidal and coastal storm action which forms the gently sloping shore of a body of salt water and includes tidal flats. Coastal beaches extend from the mean low water line landward to the dune line, coastal bank line or the seaward edge of existing human-made structures, when these structures replace one of the above lines, whichever is closest to the ocean."*

"Beach" is defined in Section 1.02 of the local wetlands regulations as *"…unconsolidated sediment subject to wave, tidal, or storm action which forms the gently sloping shore of a body of water, including land which is separated from other land by a body of water or marsh system. Beaches extend from the mean low water line landward to the dune line, bank line, or the edge of existing man-made structures, when these structures replace one of the above lines, whichever is closest to the defining water body."*

3.2.2 Coastal Dune

Coastal Dune is defined in 310 CR 10.28 as *"…any natural hill, mound or ridge of sediment landward of a coastal beach deposited by wind action or storm overwash. Coastal dune also means sediment deposited by artificial means and serving the purpose of storm damage prevention or flood control."*

"Coastal Dune" is defined in Section 1.02 of the local wetland regulations as *"… any hill, mound, ridge, or field of ridges, hills, or mounds, composed of sediment, any portion or component of which over the course of a year touches upon, exchanges sediment with, and is landward of a coastal beach deposited by wind action, storm overwash, and/or is man-made."*

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3.2.3 Coastal Bank

Coastal Bank is defined in 310 CR 10.30 as *"…the seaward face or side of any elevated landform, other than a coastal dune, which lies at the landward edge of a coastal beach, land subject to tidal action, or other wetland."*

"Bank (coastal)" is defined in Section 1.02 of the local wetlands regulations as *"…the seaward face or side of any elevated land form, other than coastal dune, which lies at the landward edge of coastal beach, coastal dune, land subject to tidal action or coastal storm flowage, or other coastal wetland. Any minor discontinuity of the slope notwithstanding, the top of the bank shall be the first significant break in slope as defined by site specific topographic plan information, site inspection, wetland habitat evaluation, geologic origin, and /or relationship to land subject to coastal storm flowage. A bank may be partially or totally vegetated, or it may be comprised of exposed soil, gravel, stone or sand. A bank may be created by man and/or made of man-made materials. A bank may or may not contribute sediment to coastal dunes, beaches and /or to the littoral drift system. A bank may be significant as a major source of sediment, as a vertical buffer, for wildlife habitat and for wetland scenic views."*

The Coastal Beach in the Project area is a steep and narrow medium to coarse-grained sand beach that is approximately 100-200 feet wide in the project area. A narrow Coastal Dune, fronting the Coastal Bank, is present starting at the stairway at 61 Baxter Road and extending southward. Sconset Bluff is a steep, actively eroding Coastal Bank. Throughout most of the project area, this Coastal Bank exhibits evidence of erosion primarily as a result of storm waves eroding the toe of the bank, but also due to surface runoff erosion.

3.2.4 Land Subject to Coastal Storm Flowage

Land Subject to Coastal Storm Flowage ("LSCSF") is defined at 310 CMR 10.04 and in Section 1.02 of the local regulations as, *"…land subject to any inundation caused by coastal storms up to and including that caused by the 100-year storm, surge of record or storm of record, whichever is greater."*

As shown on **Figure 11**, FEMA Flood Insurance Rate Map (FIRM) for the Town of Nantucket (Community Panel 25019C0112G and 25019C0114G), Flood Zone VE (el. 10 feet NAVD88) occurs along the eastern shoreline.

While the state Regulations do not presently include any presumptions of significance or performance standards for LSCSF, it is presumed that LSCSF is significant to the interests of storm damage prevention and flood control.

3.3 State-Listed Species

The Natural Heritage and Endangered Species Program ("NHESP") Estimated and Priority Habitat of Rare and Endangered Species mapping shows priority habitats for State-listed species and Estimated Habitats for rare wildlife from Lot 61 southward (see **Figure 13 – NHESP Habitat Map)**.

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Based on prior coordination with the NHESP this area is mapped for Piping Plovers (a State and Federally-listed "Threatened" species) and Least Terns (a State-listed species of "Special Concern"). While no nesting Piping Plovers or Least Terns have been observed nesting in this area during recent history[13], SBPF will consult with NHESP, the Town Beach Manager, and Town Natural Resources Director prior to conducting any work within the mapped areas to avoid adverse impacts on listed species. Additionally, sand placement activities are proposed in the fall to avoid the nesting season. Habitat quality in this area has been observed to be improving in recent years, and nature-based solutions were chosen for this area to minimize the potential of disrupting these species.

4.0 Project Description

4.1 Project Areas and Phases

The proposed Project involves bluff stabilization measures in different areas ("Reaches") and at different times ("Phases") and will involve different levels of shoreline protection that will change based on the tipping points triggers detailed below. The Project involves monitoring to determine when tipping point triggers are met to transition from one measure to another. When a tipping point trigger is met and in accordance with the OOC, the transition between different toe protection measures would be allowed by an administrative approval authorized in the OOC as a Special Conditions and to be issued by the Natural Resources Director ("NRD") or Conservation Commission Agent ("CCA").

4.1.1 Procedures for Phasing and Changes of Toe Protection Measures

The Applicants respectfully request that the OOC include a Special Condition that establishes an administrative approval process for changes in toe protection measures as described in this NOI and approved by an OOC. The Special Condition would authorize the NRD or CCA, or their designee, to conduct inspections of the Project area and Coastal Bank to confirm, in writing, that the tipping point triggers are met. Once tipping point triggers are confirmed by the NRD and/or CCA and the written concurrence is submitted to the Commission, the NRD or CCA can authorize the transition from one toe protection to the next more substantive measure within fifteen days of the report being submitted to the Commission.

The Administrative Approval Process would be outlined in the OOC as follows:

[13] Piping plovers and/or Least terns are known to nest north of Hoick's Hollow and south of the Project area at Low Beach. There have been no documented nests within the NHESP mapped habitat at 61 Baxter Road. The narrow, eroding shoreline is not suitable nesting habitat.

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Coir Terraces to Geotubes:

- Toe of bank erosion is occurring even with coir terraces in place and being properly maintained;
- Mid- or upper-slope failure is documented even with coir terraces in place and properly maintained; and
- Adequate sand source(s) secured and available to construct and maintain the geotubes pursuant to the adaptive sand management protocol.

The Natural Resource Director, Conservation Commission Agent, or their designee, will conduct a site visit, concur the above criteria have been met, and notify the Commission in writing that the criteria are met before providing administrative approval on behalf of the Conservation Commission, as confirmed as viable, to progress from coir terraces to geotube toe protection.

Dune Nourishment to Coir Terraces:

This section applies to Reach 5 and will include procedures for phased progression in Reach 5.

- The northern margin of the dune has been permanently eroded even with annual dune nourishment. Permanent loss is documented by 3 consecutive annual coastal dune inspections documenting the loss;
- The permanent loss is confirmed via a site inspection by the natural Resources Director, Conservation Commission or their designee; and
- Adequate sand source(s) secured and available to construct and maintain the coir terraces.

The Natural Resource Director, Conservation Commission Agent, or their designee, will conduct a site visit, concur the above criteria have been met, and notify the Commission in writing that the criteria are met before providing administrative approval on behalf of the Conservation Commission, as confirmed as viable, to progress from dune nourishment to coir terraces.

4.1.2 Project Phasing

Phase 1

Geotube Extension: The proposed geotube system will extend 760 feet north from the existing array to 117 Baxter Road plus 75-foot returns, and 950 feet south to 71 Baxter Road plus 75-foot returns. This will provide 2,740 feet of continuous protection from 71 to 117 Baxter Road. The "returns" are areas of angled geotubes that taper off to provide a smoother transition from the end of the geotube to the bluff or to coir terrace protection. Note, the 400-foot geotube segment fronting 109 Baxter Road and extending north will be advanced after funds for this segment are secured.

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Coir Terraces: Coir terraces are proposed in Reach 4. The continuous coir terrace system will begin at the southern edge of the proposed geotube ending at 71 Baxter Road, and extend approximately 690-feet south to 61Baxter Road, ending where the dune begins. This bluff section presently includes discrete section of coir terrace, but not continuous coir terrace protection.

Note, presently Reach 4 from 61to 71 Baxter Road shows toe of bluff and mid-slope erosion failure even with coir terraces in place making this Reach eligible for geotube protection in Phase 1. This is being delayed until Phase 2 when a sustainable sand source is available.

Dune Monitoring: Reach 5 will be monitored annually in the autumn to assess the dune condition–dune height, vegetation coverage and morphology–and document the northerly extent of the Coastal Dune.

Phase 2

Phase 2 already meets the slope failure tipping point triggers for phase progression listed above, but will only be constructed as per the administrative approval process to proceed when the sustainable sand source trigger is secured. Sustainable sand is offshore sand or other long-term source of compatible sand, as determined by grain size.

Developing the offshore sand source will require rigorous environmental review requiring the following federal, state and local approvals:

- U.S. Army Corps of Engineers Permit (review includes consultation with NMFS, USFWS, SHPO and Mass CZM)
- MEPA Review
- MassDEP Chapter 91 License
- MassDEP Section 401 Water Quality Certification (Dredging)
- Nantucket Conservation Commission – WPA and Bylaw OOC

Should sand mining occur in federal waters approval from BOEM would also be required. The extent of work and requirement for federal actions (is expected to also require review pursuant the National Environmental Policy Act in the form of the Environmental Impact Statement.

Geotube Extension: The coir terraces in Reach 4 from 61to 71 Baxter Road will be replaced with a geotube system. The geotubes will be installed and maintained the same way as described in Phase 1. Note that Reach 4 from 61to 71 Baxter Road is currently showing toe of bluff and mid-slope erosion failure even with coir terraces in place making it eligible for geotube protection presently. See **Figure 5** and Photographs**.**

Sacrificial Dune: Sand will be placed annually in front of the dune along Reach 5, approximately 41 to 61Baxter Road, a length of 1,280 ft. The sacrificial dune will be established with 5.5 cy/lf of sand and 5.5 cy/lf will be placed as needed before the winter storm season.

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Future Phases

Coir Terraces: If needed, sacrificial dune sand placement will be replaced with coir terraces and a sand template. The tipping point that triggers the switch from dune monitoring to coir terraces is the permanent loss of the natural dune at the toe of the bluff. Permanent loss is defined as the loss of Coastal Dune for three consecutive years based on annual surveys.

Geotube Extension: If coir terraces are placed in Reach 5 and they prove insufficient to protect the bluff, they will be replaced with the geotube system. The tipping point that triggers the switch from coir terraces to geotubes is when toe of bluff erosion and mid-slope erosion / failure is observed even with coir terraces in place. Toe of bluff erosion is when at least 100 feet of continuous toe is observed to be eroded behind the coir terrace during the spring inspection – after the winter storm season. Mid-slope erosion and slope failure above the coir terrace are observed to have rill erosion and denuded slopes along the rills and/or where blocks of vegetated slope have sloughed down the slope leaving an unvegetated fissure between the sloughed vegetation and stable vegetation.

4.2 Design Basis

The Project is designed to provide protection from a 100- to 200-year storm. The Project includes four tiers of geotextile tubes, each 45-feet in circumference (with appropriate dimensions of 19-feet wide and 7-feet tall when filled and in-place). The lowest tier will be set at elevation -3.0 feet MLW. This evaluation was based on modeling results described below.

The crest elevation and base elevation of the geotextile tubes was based on modeling performed with COSMOS[14]. This is a two-dimensional hydrodynamic model developed and maintained by Baird that incorporates waves, wave transformation, wave set-up, longshore currents and sediment transport.

Wave data was extracted from the North Atlantic Coast Comprehensive Study[15]. NACCS Station 684 is located directly offshore of the project site and close to Profile 90.8. Bathymetric survey data had been collected out to the NACCS extraction point. The maximum wave height was 15.4 feet with a 15 second period though a full 96-hour storm event was modeled with varying wave height, wave period and wave direction. The waves were transformed from the NACCS extraction point to the shoreline within COSMOS. October 2016 topographic and bathymetric survey data was applied in the model. A mean grain size of 0.50 mm was applied though a sensitivity analysis was performed to evaluate finer sediment.

[14] Nairn, RB and HN Southgate, 1993. Deterministic profile modelling of nearshore processes. Part 2. Sediment transport and beach profile development. Coastal Engineering 19:56–96

[15] USACE (U.S. Army Corps of Engineers). 2015. North Atlantic Coast Comprehensive Study: Resilient Adaptation to Increasing Risk. http://www.nad.usace.army.mil/CompStudy

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Two successive storm events were modeled to evaluate the potential removal of the covering sand during the first event and then determine maximum scour during the second event. The maximum modeled scour extended to approximately -2 feet MLW, with a recommended installation depth of -3 feet MLW to avoid exposing the bottom of the tube. The maximum wave runup extended to approximately 16 feet MLW. The combination of computed runup height, plus allowing one foot for relative sea level rise and accounting for the tubes reaching a height of 6- to 7-feet, necessitates the use of four tiers of geotextile tubes.

4.2.1 Geotextile Tubes and Template

The Project includes four tiers of geotextile tubes, each 45-feet in circumference (with lapproximate dimensions of 19-feet wide and 7-feet tall when filled in-place). The lowest tier will be set at elevation -3.0 feet Mean Low Water ("MLW"). See **Figure 14 – Basis of Coastal Engineering Design** for a side view of a graphic depiction of the geotubes. The Project includes 75-feet of returns at either end. Each set of returns will consist of four 45-foot circumference tubes. The Project will be installed to directly abut the pilot project with no gaps between existing and proposed geotubes.

At construction, the geotubes will be covered with a sand template, initially "filled" to a volume of 22 cy/lf. The sand template consists of two components:

1. the seaward face of the template, which is exposed to wave action during storms and high seas, and contributes sand to the littoral drift system to compensate for the structure; and

2. the sand atop the geotubes, which serves as the on-site sand stockpile used to replenish the seaward face of the template after erosion events.

Sheet 5 in Attachment I illustrates the location of the sand on the seaward face of the template, and the sand atop the geotubes. The height of the sand template varies during the year based on total volume of sand stored on top of the geotubes. Annual monitoring will be conducted to determine the volume of sand eroded off the template (i.e., contributed to the littoral system) and that volume will be replaced prior to the next winter storm season, per the Adaptive Sand Management Program described in Section 4.5.

The bluff face above the template will be vegetated using American beachgrass (*Ammophila breviligulata*) and other native plants to help stabilize the face of the bluff and prevent surface erosion.

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4.2.2 Coir Terrace System

A coir terrace system is proposed along Reach 4 as a near term toe protection measure. The bluff and performance of the coir terrace will be monitored as part of the monitoring plan. The conversion from coir terrace to geotubes on Reach 4 will be triggered when a sustainable sand source is secured. See **Attachment I, Sheet 6** for the coir terrace design. The coir terrace sand template will be re-filled and covered before each winter storm season.

Unconnected coir terrace installations are present across a subset of properties on Baxter Road, however these individual attempts to stabilize the Bluff do not provide for a continuous linear toe protection system in Reach 4. This approach yields varying degrees of success as evidenced by the continued Bluff erosion and sloughing above these installations. The coir terrace system will replace the disjointed individual terraces with a consistent and regularized installation with uniform maintenance requirements. See Figure 5 in which one observes slope erosion and sloughing above the existing coir terrace installations. The efforts proposed in this NOI differ from those previously undertaken because: (1) the current project proposes a single, continuous coir terrace system which will be more effective than non-continuous individual systems; and (2) the current project proposes ongoing maintenance of the coir terrace system, as opposed to the inconsistent maintenance used on the individual systems. A continuous system provides a better chance accelerated slope failure.

For future phases the coir terrace will be installed when annual dune monitoring documents the permanent loss of the natural dune. The loss of the natural dune is considered permanent when it is documented to be lost for three consecutive years. Coir terraces will be installed when the dune loss is 100 feet long or longer.

Coir terraces will be replaced with geotube system in future phases when the toe of the bluff exhibits erosion and mid slope failure is observed even with the coir terrace system in place. The tipping point trigger to switch from coir terraces to geotubes is when toe of bluff erosion and mid-slope erosion / failure is observed even with coir terraces in place. Toe of bluff erosion is when at least 100 feet of continuous toe is observed to be eroded behind the coir terrace during the spring inspection–after the winter storm season. Mid-slope erosion and slope failure above the coir terrace are observed to have rill erosion and denuded slopes along the rills and/or where blocks of vegetated slope have sloughed down the slope leaving an unvegetated fissure between the sloughed vegetation and stable vegetation.

4.2.3 Sacrificial Dune

The function of this sacrificial dune is to augment dune volume, to slow dune loss, and to protect the toe of the adjacent Coastal Bank. The sacrificial dune is intended to be placed and graded sand mound seaward of the natural dune to elevation +15 feet MLW, and this height will be adjusted in the field to avoid covering existing vegetation. See **Attachment I, Sheet 6** for the sacrificial dune design. The sacrificial dune will be re-established in the autumn before each winter storm season, and to avoid plover and tern nesting season.

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4.3 Pilot Project Bank Contribution

The October 2011 Massachusetts Office of Coastal Zone Management (CZM) Policy Guide provides guidance on sand compensation for ES projects:

"When a coastal engineering structure, such as a seawall, revetment, or bulkhead, is legal and determined to be the only feasible alternative, a commensurate volume of compatible material must be periodically placed in the littoral system to compensate for the material that is lost to the system. The volume of material to be required to be placed in the littoral system will be based on calculation of the long-term average annual erosion rate of the coastal landform at the site. Short-term rates can be considered in determining the compensatory volume of material if the issuing authority determines that the short-term rate is more indicative of current and future conditions due to alterations along the shore" (p. 23).

For the pilot project, the standard approach to determine compensatory sand volume yielded a length weighted bank contribution rate of 12.0 cy/lf/yr. During the public hearing it was decided that the compensatory requirement for the pilot project should be 22 cy/lf/yr annually. The required volume of 22 cy/lf/yr is approximately 1.8 times the average bank contribution. The conservative nature of the compensatory sand for the pilot project is evidenced by the fact that significant volumes of compensatory sand often remains on the sand template after each winter storm season – approximately 33,000cy of sand remained on the template at the end of 2019, and 27,450 cy at the end of 2020.

4.4 Proposed Project Bank Contribution Calculations

The purpose of calculating the bank contribution rate is to determine the appropriate volume of sediment to place on the template so that sediment contributed off the template post-construction, matches, on an annual basis, the existing volume of glacially derived sediment contributed from the Coastal Bank to the littoral drift system. Given this purpose the appropriate method to calculate existing Coastal Bank contribution rate is the volume calculated as follows: length of toe protection system x the height of the Coastal Bank x the annual retreat rate. The following calculations present the product of that equation for each transect along Sconset Bluff and aggregates the annual average contribution rate by Reach.

For the proposed Project, top of Coastal Bank retreat is observed from 71 to 119 Baxter Road. The top of Coastal Bank retreat rate was determined for the bluff from 71 – 87 Baxter Road and 105 – 119 Baxter Road, for the period of 1994 to 2022 (28 years). The portion of the bluff protected by the pilot project has not retreated, thus the top of Coastal Bank retreat rate was not re-calculated for this approximately 950-foot long segment. The retreat rate was determined using the top of Coastal Bank retreat distance along transects spaced every 10 feet and perpendicular to the bluff over this 28-year period. Using GIS tools, the top of Coastal Bank was delineated from commercially available 1994 LiDAR data as well as project-specific 2022 LiDAR surveys (from the June 2022 aerial survey) to determine the top of Coastal Bank total retreat over this 28-year period. As shown below in **Table 3: Sand Contribution by Transect (28 Years – 1994 to 2022)**, the

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average annual rate of retreat for the area from 71 – 87 and 105 – 119 Baxter Road ranges from 0.1 ft/yr to 4.3 ft/yr. The annual rate of retreat and required compensatory sand volume for transects covering 71 – 87 and 105 – 119 Baxter Road is calculated for each transect. These are aggregated to establish the compensatory rate by reach. The distance weighted annual average retreat rate by reach is presented in **Table 4: Average Yearly Sand Contribution Volume by Reach** below.

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Table 3 Sand Contribution by Transect (28 Years – 1994 to 2022)

Transect ID	Address	Retreat (Feet)	Retreat Rate (ft/yr)	Sand Contribution Volume (Cubic Yards)	Yearly Sand Contribution Volume (cy/yr)	Yearly Sand Contribution (cy/lf)	Annual Average Contribution (cy/lf/yr)
1	119 Baxter Road	45.0	1.6	1,600	57	160.0	5.7
2	119 Baxter Road	43.4	1.6	1,543	55	154.3	5.5
3	119 Baxter Road	43.6	1.6	1,534	55	153.4	5.5
4	119 Baxter Road	43.5	1.6	1,531	55	153.1	5.5
5	119 Baxter Road	38.7	1.4	1,362	49	136.2	4.9
6	119 Baxter Road	35.0	1.3	1,219	44	121.9	4.4
7	119 Baxter Road	37.0	1.3	1,288	46	128.8	4.6
8	119 Baxter Road	39.4	1.4	1,372	49	137.2	4.9
9	119 Baxter Road	47.9	1.7	1,650	59	165.0	5.9
10	117 Baxter Road	48.1	1.7	1,657	59	165.7	5.9
11	117 Baxter Road	46.6	1.7	1,622	58	162.2	5.8
12	117 Baxter Road	47.7	1.7	1,678	60	167.8	6.0
13	117 Baxter Road	46.6	1.7	1,640	59	164.0	5.9
14	117 Baxter Road	49.9	1.8	1,737	62	173.7	6.2
15	117 Baxter Road	46.6	1.7	1,640	59	164.0	5.9
16	117 Baxter Road	43.8	1.6	1,557	56	155.7	5.6
17	117 Baxter Road	39.3	1.4	1,397	50	139.7	5.0
18	117 Baxter Road	36.2	1.3	1,287	46	128.7	4.6
19	117 Baxter Road	38.9	1.4	1,383	49	138.3	4.9
20	117 Baxter Road	41.7	1.5	1,483	53	148.3	5.3
21	117 Baxter Road	40.1	1.4	1,426	51	142.6	5.1
22	115 Baxter Road	42.8	1.5	1,522	54	152.2	5.4
23	115 Baxter Road	49.6	1.8	1,764	63	176.4	6.3
24	115 Baxter Road	49.3	1.8	1,735	62	173.5	6.2
25	115 Baxter Road	43.9	1.6	1,528	55	152.8	5.5

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Table 3 Sand Contribution by Transect (28 Years – 1994 to 2022) (Continued)

Transect ID	Address	Retreat (Feet)	Retreat Rate (ft/yr)	Sand Contribution Volume (Cubic Yards)	Yearly Sand Contribution Volume (cy/yr)	Yearly Sand Contribution (cy/lf)	Annual Average Contribution (cy/lf/yr)
26	115 Baxter Road	44.7	1.6	1,556	56	155.6	5.6
27	115 Baxter Road	52.8	1.9	1,819	65	181.9	6.5
28	115 Baxter Road	50.9	1.8	1,753	63	175.3	6.3
29	115 Baxter Road	52.3	1.9	1,801	64	180.1	6.4
30	115 Baxter Road	61.5	2.2	2,118	76	211.8	7.6
31	115 Baxter Road	62.9	2.2	2,167	77	216.7	7.7
32	113 Baxter Road	63.4	2.3	2,184	78	218.4	7.8
33	113 Baxter Road	61.8	2.2	2,129	76	212.9	7.6
34	113 Baxter Road	56.5	2.0	1,946	70	194.6	7.0
35	113 Baxter Road	49.9	1.8	1,719	61	171.9	6.1
36	113 Baxter Road	54.5	1.9	1,877	67	187.7	6.7
37	113 Baxter Road	51.2	1.8	1,764	63	176.4	6.3
38	113 Baxter Road	45.0	1.6	1,550	55	155.0	5.5
39	113 Baxter Road	46.7	1.7	1,609	57	160.9	5.7
40	113 Baxter Road	46.4	1.7	1,598	57	159.8	5.7
41	113 Baxter Road	41.8	1.5	1,424	51	142.4	5.1
42	109 Baxter Road	46.6	1.7	1,588	57	158.8	5.7
43	109 Baxter Road	49.9	1.8	1,700	61	170.0	6.1
44	109 Baxter Road	47.2	1.7	1,608	57	160.8	5.7
45	109 Baxter Road	53.2	1.9	1,793	64	179.3	6.4
46	109 Baxter Road	54.7	2.0	1,844	66	184.4	6.6
47	109 Baxter Road	55.2	2.0	1,860	66	186.0	6.6
48	109 Baxter Road	61.2	2.2	2,063	74	206.3	7.4
49	109 Baxter Road	64.1	2.3	2,160	77	216.0	7.7
50	109 Baxter Road	67.1	2.4	2,262	81	226.2	8.1

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Table 3 Sand Contribution by Transect (28 Years – 1994 to 2022) (Continued)

Transect ID	Address	Retreat (Feet)	Retreat Rate (ft/yr)	Sand Contribution Volume (Cubic Yards)	Yearly Sand Contribution Volume (cy/yr)	Yearly Sand Contribution (cy/lf)	Annual Average Contribution (cy/lf/yr)
51	109 Baxter Road	72.7	2.6	2,450	88	245.0	8.8
52	109 Baxter Road	72.1	2.6	2,430	87	243.0	8.7
53	109 Baxter Road	74.1	2.6	2,497	89	249.7	8.9
54	109 Baxter Road	76.3	2.7	2,543	91	254.3	9.1
55	109 Baxter Road	68.9	2.5	2,297	82	229.7	8.2
56	109 Baxter Road	64.8	2.3	2,160	77	216.0	7.7
57	109 Baxter Road	60.4	2.2	2,013	72	201.3	7.2
58	109 Baxter Road	57.8	2.1	1,927	69	192.7	6.9
59	107A Baxter Road	54.0	1.9	1,800	64	180.0	6.4
60	107A Baxter Road	54.0	1.9	1,800	64	180.0	6.4
61	107A Baxter Road	59.9	2.1	2,019	72	201.9	7.2
62	107A Baxter Road	60.1	2.1	2,026	72	202.6	7.2
63	107A Baxter Road	61.2	2.2	2,040	73	204.0	7.3
64	107A Baxter Road	64.1	2.3	2,160	77	216.0	7.7
65	107A Baxter Road	67.8	2.4	2,260	81	226.0	8.1
66	107 Baxter Road	72.1	2.6	2,403	86	240.3	8.6
67	107 Baxter Road	77.8	2.8	2,593	93	259.3	9.3
68	107 Baxter Road	71.5	2.6	2,357	84	235.7	8.4
69	107 Baxter Road	72.9	2.6	2,403	86	240.3	8.6
70	107 Baxter Road	75.3	2.7	2,482	89	248.2	8.9
71	107 Baxter Road	75.5	2.7	2,489	89	248.9	8.9
72	107 Baxter Road	74.2	2.7	2,418	86	241.8	8.6
73	107 Baxter Road	73.1	2.6	2,383	85	238.3	8.5
74	107 Baxter Road	81.7	2.9	2,663	95	266.3	9.5
75	107 Baxter Road	78.9	2.8	2,572	92	257.2	9.2

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Table 3 Sand Contribution by Transect (28 Years – 1994 to 2022) (Continued)

Transect ID	Address	Retreat (Feet)	Retreat Rate (ft/yr)	Sand Contribution Volume (Cubic Yards)	Yearly Sand Contribution Volume (cy/yr)	Yearly Sand Contribution (cy/lf)	Annual Average Contribution (cy/lf/yr)
76	105 Baxter Road	79.9	2.9	2,604	93	260.4	9.3
77	105 Baxter Road	82.9	3.0	2,641	94	264.1	9.4
78	105 Baxter Road	87.2	3.1	2,777	99	277.7	9.9
79	105 Baxter Road	85.7	3.1	2,698	96	269.8	9.6
80	105 Baxter Road	92.9	3.3	2,890	103	289.0	10.3
81	105 Baxter Road	92.2	3.3	2,868	102	286.8	10.2
82	105 Baxter Road	94.2	3.4	2,931	105	293.1	10.5
83	105 Baxter Road	99.5	3.6	3,059	109	305.9	10.9
84	105 Baxter Road	93.7	3.3	2,880	103	288.0	10.3
85	105 Baxter Road	93.4	3.3	2,871	103	287.1	10.3
86	105 Baxter Road	92.9	3.3	2,856	102	285.6	10.2
87	105 Baxter Road	91.2	N/A	N/A	N/A	N/A	N/A
88	105 Baxter Road	87.5	N/A	N/A	N/A	N/A	N/A
89	105 Baxter Road	79.8	N/A	N/A	N/A	N/A	N/A
90	105 Baxter Road	79.4	N/A	N/A	N/A	N/A	N/A
91	105 Baxter Road	78.8	N/A	N/A	N/A	N/A	N/A
92	105 Baxter Road	79.1	N/A	N/A	N/A	N/A	N/A
93	101 Baxter Road	84.1	N/A	N/A	N/A	N/A	N/A
94	101 Baxter Road	81.7	N/A	N/A	N/A	N/A	N/A
95	101 Baxter Road	79.0	N/A	N/A	N/A	N/A	N/A
96	101 Baxter Road	85.0	N/A	N/A	N/A	N/A	N/A
97	101 Baxter Road	80.3	N/A	N/A	N/A	N/A	N/A
98	101 Baxter Road	84.6	N/A	N/A	N/A	N/A	N/A
99	101 Baxter Road	78.6	N/A	N/A	N/A	N/A	N/A
100	101 Baxter Road	75.8	N/A	N/A	N/A	N/A	N/A

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Table 3 Sand Contribution by Transect (28 Years – 1994 to 2022) (Continued)

Transect ID	Address	Retreat (Feet)	Retreat Rate (ft/yr)	Sand Contribution Volume (Cubic Yards)	Yearly Sand Contribution Volume (cy/yr)	Yearly Sand Contribution (cy/lf)	Annual Average Contribution (cy/lf/yr)
101	101 Baxter Road	67.0	N/A	N/A	N/A	N/A	N/A
102	101 Baxter Road	66.3	N/A	N/A	N/A	N/A	N/A
103	101 Baxter Road	75.4	N/A	N/A	N/A	N/A	N/A
104	101 Baxter Road	79.2	N/A	N/A	N/A	N/A	N/A
105	101 Baxter Road	78.5	N/A	N/A	N/A	N/A	N/A
106	101 Baxter Road	77.5	N/A	N/A	N/A	N/A	N/A
107	101 Baxter Road	77.5	N/A	N/A	N/A	N/A	N/A
108	101 Baxter Road	82.0	N/A	N/A	N/A	N/A	N/A
109	101 Baxter Road	80.1	N/A	N/A	N/A	N/A	N/A
110	101 Baxter Road	76.2	N/A	N/A	N/A	N/A	N/A
111	99 Baxter Road	74.8	N/A	N/A	N/A	N/A	N/A
112	99 Baxter Road	72.9	N/A	N/A	N/A	N/A	N/A
113	99 Baxter Road	74.8	N/A	N/A	N/A	N/A	N/A
114	99 Baxter Road	76.2	N/A	N/A	N/A	N/A	N/A
115	99 Baxter Road	73.2	N/A	N/A	N/A	N/A	N/A
116	99 Baxter Road	70.8	N/A	N/A	N/A	N/A	N/A
117	99 Baxter Road	77.7	N/A	N/A	N/A	N/A	N/A
118	99 Baxter Road	80.7	N/A	N/A	N/A	N/A	N/A
119	99 Baxter Road	76.5	N/A	N/A	N/A	N/A	N/A
120	99 Baxter Road	76.1	N/A	N/A	N/A	N/A	N/A
121	99 Baxter Road	74.8	N/A	N/A	N/A	N/A	N/A
122	99 Baxter Road	77.4	N/A	N/A	N/A	N/A	N/A
123	99 Baxter Road	76.0	N/A	N/A	N/A	N/A	N/A
124	99 Baxter Road	75.1	N/A	N/A	N/A	N/A	N/A
125	99 Baxter Road	80.8	N/A	N/A	N/A	N/A	N/A

Table 3 Sand Contribution by Transect (28 Years – 1994 to 2022) (Continued)

Transect ID	Address	Retreat (Feet)	Retreat Rate (ft/yr)	Sand Contribution Volume (Cubic Yards)	Yearly Sand Contribution Volume (cy/yr)	Yearly Sand Contribution (cy/lf)	Annual Average Contribution (cy/lf/yr)
126	99 Baxter Road	83.3	N/A	N/A	N/A	N/A	N/A
127	99 Baxter Road	84.2	N/A	N/A	N/A	N/A	N/A
128	99 Baxter Road	85.7	N/A	N/A	N/A	N/A	N/A
129	99 Baxter Road	82.3	N/A	N/A	N/A	N/A	N/A
130	97 Baxter Road	79.1	N/A	N/A	N/A	N/A	N/A
131	97 Baxter Road	75.8	N/A	N/A	N/A	N/A	N/A
132	97 Baxter Road	76.5	N/A	N/A	N/A	N/A	N/A
133	97 Baxter Road	83.9	N/A	N/A	N/A	N/A	N/A
134	97 Baxter Road	83.6	N/A	N/A	N/A	N/A	N/A
135	97 Baxter Road	88.8	N/A	N/A	N/A	N/A	N/A
136	97 Baxter Road	91.5	N/A	N/A	N/A	N/A	N/A
137	97 Baxter Road	88.8	N/A	N/A	N/A	N/A	N/A
138	97 Baxter Road	85.7	N/A	N/A	N/A	N/A	N/A
139	97 Baxter Road	89.4	N/A	N/A	N/A	N/A	N/A
140	97 Baxter Road	93.1	N/A	N/A	N/A	N/A	N/A
141	97 Baxter Road	94.9	N/A	N/A	N/A	N/A	N/A
142	97 Baxter Road	95.4	N/A	N/A	N/A	N/A	N/A
143	97 Baxter Road	97.4	N/A	N/A	N/A	N/A	N/A
144	97 Baxter Road	100.1	N/A	N/A	N/A	N/A	N/A
145	97 Baxter Road	95.7	N/A	N/A	N/A	N/A	N/A
146	97 Baxter Road	95.9	N/A	N/A	N/A	N/A	N/A
147	93 Baxter Road	92.9	N/A	N/A	N/A	N/A	N/A
148	93 Baxter Road	90.9	N/A	N/A	N/A	N/A	N/A
149	93 Baxter Road	88.2	N/A	N/A	N/A	N/A	N/A
150	93 Baxter Road	100.3	N/A	N/A	N/A	N/A	N/A

Table 3 Sand Contribution by Transect (28 Years – 1994 to 2022) (Continued)

Transect ID	Address	Retreat (Feet)	Retreat Rate (ft/yr)	Sand Contribution Volume (Cubic Yards)	Yearly Sand Contribution Volume (cy/yr)	Yearly Sand Contribution (cy/lf)	Annual Average Contribution (cy/lf/yr)
151	93 Baxter Road	107.9	N/A	N/A	N/A	N/A	N/A
152	93 Baxter Road	107.9	N/A	N/A	N/A	N/A	N/A
153	93 Baxter Road	102.4	N/A	N/A	N/A	N/A	N/A
154	93 Baxter Road	101.1	N/A	N/A	N/A	N/A	N/A
155	93 Baxter Road	103.1	N/A	N/A	N/A	N/A	N/A
156	93 Baxter Road	101.7	N/A	N/A	N/A	N/A	N/A
157	91 Baxter Road	94.1	N/A	N/A	N/A	N/A	N/A
158	91 Baxter Road	89.0	N/A	N/A	N/A	N/A	N/A
159	91 Baxter Road	55.7	N/A	N/A	N/A	N/A	N/A
160	91 Baxter Road	43.8	N/A	N/A	N/A	N/A	N/A
161	91 Baxter Road	40.6	N/A	N/A	N/A	N/A	N/A
162	91 Baxter Road	34.3	N/A	N/A	N/A	N/A	N/A
163	91 Baxter Road	28.9	N/A	N/A	N/A	N/A	N/A
164	91 Baxter Road	26.3	N/A	N/A	N/A	N/A	N/A
165	91 Baxter Road	24.9	N/A	N/A	N/A	N/A	N/A
166	87 Baxter Road	23.8	N/A	N/A	N/A	N/A	N/A
167	87 Baxter Road	22.7	N/A	N/A	N/A	N/A	N/A
168	87 Baxter Road	42.9	N/A	N/A	N/A	N/A	N/A
169	87 Baxter Road	67.0	N/A	N/A	N/A	N/A	N/A
170	87 Baxter Road	71.2	N/A	N/A	N/A	N/A	N/A
171	87 Baxter Road	86.0	N/A	N/A	N/A	N/A	N/A
172	87 Baxter Road	109.7	N/A	N/A	N/A	N/A	N/A
173	87 Baxter Road	108.4	N/A	N/A	N/A	N/A	N/A
174	87 Baxter Road	107.4	N/A	N/A	N/A	N/A	N/A
175	87 Baxter Road	104.9	N/A	N/A	N/A	N/A	N/A

Table 3 Sand Contribution by Transect (28 Years – 1994 to 2022) (Continued)

Transect ID	Address	Retreat (Feet)	Retreat Rate (ft/yr)	Sand Contribution Volume (Cubic Yards)	Yearly Sand Contribution Volume (cy/yr)	Yearly Sand Contribution (cy/lf)	Annual Average Contribution (cy/lf/yr)
176	87 Baxter Road	102.2	N/A	N/A	N/A	N/A	N/A
177	87 Baxter Road	100.9	N/A	N/A	N/A	N/A	N/A
178	87 Baxter Road	105.4	N/A	N/A	N/A	N/A	N/A
179	87 Baxter Road	108.9	3.9	2,783	99	278.3	9.9
180	87 Baxter Road	102.4	3.7	2,617	93	261.7	9.3
181	87 Baxter Road	99.7	3.6	2,548	91	254.8	9.1
182	Easement between 87 and 85 Baxter Road	96.9	3.5	2,512	90	251.2	9.0
183	Easement between 87 and 85 Baxter Road	94.3	3.4	2,445	87	244.5	8.7
184	85 Baxter Road	103.1	3.7	2,673	95	267.3	9.5
185	85 Baxter Road	102.2	3.7	2,612	93	261.2	9.3
186	85 Baxter Road	105.2	3.8	2,688	96	268.8	9.6
187	85 Baxter Road	104.7	3.7	2,676	96	267.6	9.6
188	85 Baxter Road	107.4	3.8	2,745	98	274.5	9.8
189	85 Baxter Road	113.1	4.0	2,890	103	289.0	10.3
190	85 Baxter Road	110.1	3.9	2,814	100	281.4	10.0
191	85 Baxter Road	114.2	4.1	2,918	104	291.8	10.4
192	85 Baxter Road	118.0	4.2	3,016	108	301.6	10.8
193	85 Baxter Road	120.2	4.3	3,072	110	307.2	11.0
194	85 Baxter Road	113.7	4.1	2,864	102	286.4	10.2
195	85 Baxter Road	105.7	3.8	2,662	95	266.2	9.5
196	85 Baxter Road	101.9	3.6	2,566	92	256.6	9.2
197	85 Baxter Road	98.2	3.5	2,510	90	251.0	9.0
198	85 Baxter Road	94.9	3.4	2,425	87	242.5	8.7

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Table 3 Sand Contribution by Transect (28 Years – 1994 to 2022) (Continued)

Transect ID	Address	Retreat (Feet)	Retreat Rate (ft/yr)	Sand Contribution Volume (Cubic Yards)	Yearly Sand Contribution Volume (cy/yr)	Yearly Sand Contribution (cy/lf)	Annual Average Contribution (cy/lf/yr)
199	85 Baxter Road	88.7	3.2	2,267	81	226.7	8.1
200	85 Baxter Road	84.7	3.0	2,165	77	216.5	7.7
201	85 Baxter Road	85.3	3.0	2,148	77	214.8	7.7
202	85 Baxter Road	81.1	2.9	2,073	74	207.3	7.4
203	85 Baxter Road	87.2	3.1	2,228	80	222.8	8.0
204	85 Baxter Road	95.1	3.4	2,430	87	243.0	8.7
205	85 Baxter Road	93.3	3.3	2,384	85	238.4	8.5
206	85 Baxter Road	87.0	3.1	2,223	79	222.3	7.9
207	85 Baxter Road	82.9	3.0	2,119	76	211.9	7.6
208	85 Baxter Road	83.4	3.0	2,131	76	213.1	7.6
209	85 Baxter Road	82.8	3.0	2,116	76	211.6	7.6
210	85 Baxter Road	80.3	2.9	2,052	73	205.2	7.3
211	83 Baxter Road	77.6	2.8	1,983	71	198.3	7.1
212	83 Baxter Road	65.3	2.3	1,669	60	166.9	6.0
213	83 Baxter Road	58.2	2.1	1,487	53	148.7	5.3
214	83 Baxter Road	64.4	2.3	1,646	59	164.6	5.9
215	83 Baxter Road	64.2	2.3	1,641	59	164.1	5.9
216	83 Baxter Road	59.2	2.1	1,513	54	151.3	5.4
217	83 Baxter Road	57.1	2.0	1,459	52	145.9	5.2
218	83 Baxter Road	57.6	2.1	1,472	53	147.2	5.3
219	83 Baxter Road	64.8	2.3	1,656	59	165.6	5.9
220	83 Baxter Road	64.8	2.3	1,656	59	165.6	5.9
221	83 Baxter Road	62.7	2.2	1,602	57	160.2	5.7
222	83 Baxter Road	60.4	2.2	1,544	55	154.4	5.5
223	83 Baxter Road	60.2	2.2	1,538	55	153.8	5.5

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Table 3 Sand Contribution by Transect (28 Years – 1994 to 2022) (Continued)

Transect ID	Address	Retreat (Feet)	Retreat Rate (ft/yr)	Sand Contribution Volume (Cubic Yards)	Yearly Sand Contribution Volume (cy/yr)	Yearly Sand Contribution (cy/lf)	Annual Average Contribution (cy/lf/yr)
224	81 Baxter Road	57.3	2.0	1,464	52	146.4	5.2
225	81 Baxter Road	56.4	2.0	1,441	51	144.1	5.1
226	81 Baxter Road	57.7	2.1	1,475	53	147.5	5.3
227	81 Baxter Road	57.1	2.0	1,459	52	145.9	5.2
228	81 Baxter Road	56.2	2.0	1,457	52	145.7	5.2
229	81 Baxter Road	52.3	1.9	1,356	48	135.6	4.8
230	81 Baxter Road	55.3	2.0	1,434	51	143.4	5.1
231	81 Baxter Road	53.7	1.9	1,412	50	141.2	5.0
232	81 Baxter Road	50.6	1.8	1,331	48	133.1	4.8
233	81 Baxter Road	47.7	1.7	1,272	45	127.2	4.5
234	79 Baxter Road	45.1	1.6	1,236	44	123.6	4.4
235	79 Baxter Road	39.4	1.4	1,080	39	108.0	3.9
236	79 Baxter Road	34.4	1.2	943	34	94.3	3.4
237	79 Baxter Road	26.2	0.9	718	26	71.8	2.6
238	79 Baxter Road	22.7	0.8	622	22	62.2	2.2
239	79 Baxter Road	22.0	0.8	603	22	60.3	2.2
240	79 Baxter Road	19.2	0.7	526	19	52.6	1.9
241	79 Baxter Road	17.3	0.6	474	17	47.4	1.7
242	79 Baxter Road	13.9	0.5	381	14	38.1	1.4
243	79 Baxter Road	10.2	0.4	276	10	27.6	1.0
244	77 Baxter Road	13.0	0.5	351	13	35.1	1.3
245	77 Baxter Road	14.6	0.5	395	14	39.5	1.4
246	77 Baxter Road	19.0	0.7	514	18	51.4	1.8
247	77 Baxter Road	21.6	0.8	584	21	58.4	2.1
248	77 Baxter Road	24.1	0.9	652	23	65.2	2.3

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Table 3 Sand Contribution by Transect (28 Years – 1994 to 2022) (Continued)

Transect ID	Address	Retreat (Feet)	Retreat Rate (ft/yr)	Sand Contribution Volume (Cubic Yards)	Yearly Sand Contribution Volume (cy/yr)	Yearly Sand Contribution (cy/lf)	Annual Average Contribution (cy/lf/yr)
249	77 Baxter Road	25.1	0.9	679	24	67.9	2.4
250	77 Baxter Road	34.5	1.2	933	33	93.3	3.3
251	77 Baxter Road	38.6	1.4	1,044	37	104.4	3.7
252	75 Baxter Road	40.0	1.4	1,067	38	106.7	3.8
253	75 Baxter Road	45.0	1.6	1,200	43	120.0	4.3
254	75 Baxter Road	45.1	1.6	1,203	43	120.3	4.3
255	75 Baxter Road	42.8	1.5	1,141	41	114.1	4.1
256	75 Baxter Road	40.9	1.5	1,091	39	109.1	3.9
257	75 Baxter Road	39.6	1.4	1,056	38	105.6	3.8
258	75 Baxter Road	38.9	1.4	1,023	37	102.3	3.7
259	75 Baxter Road	45.2	1.6	1,189	42	118.9	4.2
260	73 Baxter Road	44.7	1.6	1,159	41	115.9	4.1
261	73 Baxter Road	48.5	1.7	1,257	45	125.7	4.5
262	73 Baxter Road	42.9	1.5	1,112	40	111.2	4.0
263	73 Baxter Road	43.1	1.5	1,117	40	111.7	4.0
264	73 Baxter Road	41.4	1.5	1,058	38	105.8	3.8
265	73 Baxter Road	40.5	1.4	1,035	37	103.5	3.7
266	73 Baxter Road	40.4	1.4	1,017	36	101.7	3.6
267	73 Baxter Road	41.4	1.5	1,043	37	104.3	3.7
268	73 Baxter Road	37.4	1.3	942	34	94.2	3.4
269	73 Baxter Road	37.5	1.3	944	34	94.4	3.4
270	73 Baxter Road	36.8	1.3	927	33	92.7	3.3
271	73 Baxter Road	33.3	1.2	839	30	83.9	3.0
272	73 Baxter Road	36.3	1.3	914	33	91.4	3.3
273	73 Baxter Road	38.1	1.4	960	34	96.0	3.4

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Table 3 Sand Contribution by Transect (28 Years – 1994 to 2022) (Continued)

Transect ID	Address	Retreat (Feet)	Retreat Rate (ft/yr)	Sand Contribution Volume (Cubic Yards)	Yearly Sand Contribution Volume (cy/yr)	Yearly Sand Contribution (cy/lf)	Annual Average Contribution (cy/lf/yr)
274	73 Baxter Road	40.6	1.5	1,007	36	100.7	3.6
275	71 Baxter Road	36.5	1.3	906	32	90.6	3.2
276	71 Baxter Road	23.9	0.9	593	21	59.3	2.1
277	71 Baxter Road	9.9	0.4	242	9	24.2	0.9
278	71 Baxter Road	5.7	0.2	139	5	13.9	0.5
279	71 Baxter Road	2.0	0	49	2	5	0.2

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Table 4 Average Yearly Sand Contribution Volume by Reach

Reach	Transects	Lots	Total Sand Contribution Volume (Cubic Yards)	Annual Average Contribution (cy/lf/yr)	Years of Sand Available in the 22 cy/lf Template
REACH 1 (600 ft.)	1 to 60	109 to 119	105,963	6.3	3.5
REACH 2: North (250 ft.)	61 to 86	107A to 105	66,343	9.0	2.4
REACH 2	87 to 178	87 to 105	Protected by Pilot Project		
REACH 2: South (300 ft.)	179 to 208	85 to 87	76,203	9.1	2.4
REACH 3 (650 ft.)	209 to 274	71 to 83	75,446	4.1	5.4
REACH 4 (690ft.)	275 to 279	to 71*	1,929	1.4	15.7
REACHES 1-4 UNPROTECTED AREA			325,884	6.2	3.5

* While Reach 4 extends from 61-71 Baxter Road, only lot 71 (transects 275 – 279) is experiencing measurable top of Coastal Bank retreat. That retreat rate is extended along the entire reach.

4.5 Adaptive Compensatory Sand Management by Reach

For the proposed Project, the Applicants propose an adaptive sand compensation program, 22 cy/lf of sand will be available each year for the winter storm season. The proposed sand compensation plan is to place the full 22 cy/lf of sand on the template during construction. Annual monitoring will determine the volume of sand contributed off the template during the winter storm season. Before the start of the next storm season each fall, the template will be "re-filled" to 22 cy/lf/yr to replace the sand lost the previous storm season to ensure that 22 cy/lf is always available at the start of each storm season.

Consistent with current practice, each time the seaward portion of the sand template washes away, as designed during storm events, the sand template will be re-graded (sand from the top will be pushed down) to re-cover the seaward face of the geotubes so that the geotextile tubes remain covered, and sand is available to the littoral system.

Based on data from 1994-2021, the volume of sand contributed to the template yearly by each reach is less than 22 cy/lf/yr, thus the full template volume provides and adequate margin of safety (excess sand), as summarized in Table 4 above. The margin of safety is presented as the number of years the 22cy/lf/yr provides based on the unprotected Bank contribution rate, and that ranges from 2.4 to 15.7 years.

To compare the sand volume contributed off the template to pre-construction rates, the Applicants propose a look back every five years to determine the annual average volume of sand contributed to the littoral drift system. This will involve summing the 5-year total sand volume contributed to the littoral drift system to establish the annual average over that period. If the total contributed is less than what the pre-construction unprotected Coastal Bank would have contributed over that 5-year period, then extra sand will be added to the template over a 3-year period to make up for that shortfall. If the 5-year annual average is equal to or greater than the

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pre-construction Coastal Bank contribution, then no change to sand delivery will be made. Five years was selected to account for the randomness in intense winter storm years vs. less intense winter storm seasons.

4.6 Sand Source

Initially sand will be sourced from on-island commercial sand pits, off-island commercial sand pits, or from various on-island construction / excavation sites. Sand sources that have been utilized for the current geotube pilot project include the following sources. Percentages indicated below are based on four years of template maintenance.

- On-island commercial vendors (0%)
- On-island construction/excavation sites (64%)
- Dredged material (Polpis Harbor sand) (25%)
- Off-island commercial vendors (11%)

Only sand compatible with beach and bluff sediment will be used on the template. A detailed description of sand specifications is presented in **Attachment G – Compensatory Sand Analysis Protocol**, and summarized below. Sand grain size compatibility is based on grain being compatible with bank and beach sediment. Dr. Rosen reported on beach and bank sediment sampling from 1998, 2001, 2003, and 2006. He reported the beach sediments ranged from medium sand to coarse sand, and the bank sediment ranged from medium to fine sand. Sand accepted for use on the template will be predominantly medium to coarse sand to be consistent with bank and beach sediments.

Due diligence of non-commercial sand pit sources will performed to ensure sand is considered clean, i.e., unlikely to contain anthropomorphic contamination. Commercial on- and off-island sand pits are considered to be clean sand, i.e., free of anthropogenic contamination and debris. No physical sand screening to remove debris will be conducted by contractors prior to placing sand sourced from commercial sand pits. Sieve analysis provided by the sand pit owners/operators will be obtained to confirm sand is compatible before sand is placed on the template. Only sand compatible based on grain size will be accepted from commercial sand pits.

Sand sourced from on-island construction/excavation sites will be evaluated for grain size compatibility, and a desktop due diligence will be performed to exclude sources with a potential for anthropogenic contamination. Representative sand samples will be collected from random portions of the excavation, or already excavated sand stockpile, and sent to a certified soil testing laboratory and a “chain of custody” will be maintained. The laboratory will conduct dry sieve analysis of the sample(s) according to standard ASTM protocols. The results will be compared to existing bluff and beach grain size. Only those sources determined to have grain size that are compatible with the existing bluff and beach sediments will be accepted for use on the template.

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Concurrent with grain size analysis, on-island sources, other than commercial sand pits, will be evaluated for the potential presence / absence of anthropogenic contamination. Either a desktop assessment of sites consistent with a Phase I site assessment, or the use of a third-party vendor providing Phase I site assessment quality data, e.g., Environmental Data Resources, Inc., will be used to evaluate source sites. Sand will not be accepted from source sites that are likely to be contaminated with anthropogenic contamination. If sand is proposed for use on the template from sites suspected of anthropogenic contamination, additional sand testing will be conducted consistent with the analyses and methods described in 314 CMR 9.07(2)(a)6.

The results of sand sieve analyses and desktop assessment (and chemical testing if needed) will be provided to the Natural Resources Department ("NRD") before sand is delivered to the template.

Sand sourced from on-island construction / excavation sites on which previous site work is suspected or known, will be physically screened using a 2-inch mesh to remove man-made debris and stones larger than 2-inches. Sand sourced from virgin excavation sites will not be physically screened.

The Applicants anticipate pursuing a future offshore sand source (i.e., a sustainable sand source). After and offshore sand source is approved and secured, offshore sand will be used for the Project. Development of an off-shore sand source will require source site evaluation including sand grain size. Only sand with compatible grain size will be sourced and used for compensatory sand. Developing the offshore sand source will require rigorous environmental review requiring the following federal, state and local approvals:

- U.S. Army Corps of Engineers Permit (review includes consultation with NMFS, USFWS, SHPO and Mass CZM)
- MEPA Review
- MassDEP Chapter 91 License
- MassDEP Section 401 Water Quality Certification (Dredging)
- Nantucket Conservation Commission – WPA and Bylaw OOC

Should sand mining occur in federal waters approval from BOEM would also be required. The extent of work and requirement for federal actions (is expected to also require review pursuant the National Environmental Policy Act in the form of the Environmental Impact Statement.

4.7 Construction Overview

During construction of the geotubes, coir terrace and sacrificial dune (all phases) construction equipment working on the beach will remain above the mean high-water line.

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The Project will be phased as described herein. In parallel with applicant funding, SBPF and TON will work to identify third party funds for the Project from state and federal programs as well as philanthropic organizations and evaluate a resilience district option to support the Project.

Weather will be monitored during construction, and activities on the beach will be timed to avoid predicted storm and flooding events. Should a storm be predicted during construction, construction equipment, vehicles and materials (e.g., coir fabric, geotubes, plywood, stakes, etc.) will be removed from the beach before the predicted storm event. Any sand stockpiled on the beach for use in construction maybe left on the beach at the contractor's discretion.

4.7.1 Geotube and Template Construction

The anticipated duration for Phase 1 construction is 4- to 6-months. Construction will proceed according to the following sequence:

1. Construction equipment will access the beach via Hoick's Hollow.
2. The initial step will be excavating the trench for the lowest tier of geotextile tubes down to elevation -3.0 feet MLW. The trench will be approximately 35-feet wide and 200 feet long. Material excavated from the trench will be temporarily placed seaward of the trench.
3. The first section of scour apron with anchor tube will be rolled out inside the trench. The anchor tube will extend to approximately 10-feet from the seaward edge of the bottom tier of geotextile tubes. After the first section of scour apron/anchor tube is in place, the geotextile tubes that make up the lowest tier will be laid out on top of the apron.
4. The lowest tier geotextile tube is inflated by pumping water from the trench into the geotextile tube through portholes until the required shape and elevation is obtained. Sand is then entrained in the water creating an 80/20 water-to-sand slurry mixture that is pumped into portholes in each geotextile tube. The sand stays within the geotube and the water exits the far end of the geotube through another porthole. The water flows back into the excavation trench. Once fully filled, the porthole sleeves will be rolled up and tucked into the geotextile tube leaving a void of approximately 1 cubic foot. The port hole is then filled with high-strength concrete. These concrete plugs will then be covered with a geotextile patch.
5. Each section of the lowest tier of geotextile tubes will be overlapped with the adjacent geotextile tube.
6. After each segment of the lowest tier of geotextile tubes is filled, the integrated anchor tube will be filled using the same slurry pumping system. This process will be repeated until the lowest tier is completed. Upon completion, the trench will be filled in.
7. Prior to installation of the second tier, some sand from on-island pits ("pit sand") or other approved compatible source will be spread behind (landward of) the lowest tier to make a "bench" for the second tier.

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8. A new water source trench will be excavated seaward of the bottom tier to provide the water used to create the slurry.
9. The tier 2 geotextile tubes will be filled with a sand slurry (as described in #4 above) using pit sand as a sand source. The pit sand will be delivered to the top of the bank and dumped over the top of the bank.
10. The tier 3 geotextile tubes be positioned to overlap with the tier 2 geotextile tube layer. The tier 3 geotextile tubes will be filled with a sand slurry (as described in #4 above). The water source for the slurry will be obtained by excavating a trench seaward of the tier 3 geotextile tube, in a location similar to the water source trench used for the tier 2 geotextile tube. The water source trench will be maintained using the excavated sand to create dikes at its seaward side, landward of the Mean High Water (MHW) line.
11. The area landward of the tier 3 geotextile tube (the "bench") will be created with sand to match the top of the filled tier 3 geotextile tube. The scour apron will be laid flat on the back (landward) side of the third tube prior to backfilling the bench. This scour apron has a small 3' circumference anchor tube attached to it; no excavation into the bank will be required to place the scour apron or anchor tube.
12. The tier 4 geotextile tube will be placed and filled in a manner similar to the tier 3 geotextile tube.
13. The returns will be installed by excavating the initial trench for the lowest tiers and then filling all tiers using the slurry system.
14. Once all geotextile tubes are filled, the entire structure will be covered with sand using the excavators and the bulldozer.

4.7.2 Coir Terraces Construction

1. Construction equipment will access the beach via Hoick's Hollow.
2. The initial step will be excavating the trench for the lowest coir terrace to elevation +8 feet MLW. The trench will be approximately 10-feet wide. Material excavated from the trench will be temporarily placed seaward of the trench.
3. The lowest terrace will be formed be placing coir fabric in the trench and extending it up the side walls. Sand will be placed in approximately 1-foot lifts to a full depth of 3-feet, to form the 3-foot by 3-foot cross-section envelope. Plywood will be used as forms as needed to maintain the 3-foot-wide coir envelope.
4. After the sand is placed, the coir fabric will be sewn closed to encapsulate the sand in the coir envelope.
5. The trench will be backfilled with excavated beach sand to the top of the first coir envelope.
6. Steps 3 through 5 will be used to install the remaining tiers.

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7. After the coir envelopes are installed, the terrace will be covered with compatible sand at a rate of 1.4 cy/lf.

4.7.3 Sacrificial Dune Construction

This measure is limited to placing sand along the seaward face of the natural dune. To establish the sacrificial dune the following steps will be followed:

1. Construction equipment will access the beach via Hoick's Hollow.
2. Compatible sand will be placed seaward of the natural dune in 2-foot lifts to the full height of el. 15 feet MLW or the height of the beachgrass on the natural dune, whichever is lower.
3. While placing the sand lifts, step successive (higher) lifts will be placed landward of the lower lift to form the approximately 3:1 slope on the seaward face of the sacrificial dune.

4.7.4 Construction Access

All construction equipment will access the beach from Hoick's Hollow. All construction vehicles will be fueled in the Hoick's Hollow parking lot area; non-mobile or less-mobile equipment such as the hydraulic pump will be filled on the beach using a small transfer tank.

4.7.5 Template Sand Delivery

Sand will be delivered to the site via dump trucks for Phase 1. The dump trucks will deliver the sand to the sand delivery area(s), where it will be pushed over the edge and onto the geotextile tubes below. Sand delivery locations for the proposed Project include the existing sand delivery area at the access between 85/87 Baxter Road and two new locations: the access between 105/107 Baxter Road and the access between 71/73 Baxter Road.

The volume of compensatory sand delivered to the site will be determined by the adaptive sand management scheme. Site visits will be conducted in the early spring and late summer to survey the volume of sand on the geotube that has been removed, and this amount will be replaced.

4.8 Vegetation

Where the bank face is denuded, the Project includes planting American beachgrass and other native vegetation to help stabilize the face of the bank. American Beachgrass has been planted in the area of the pilot project and is growing well (**Figure 15 – Vegetation in Existing Pilot Project Area**). Where needed, a veneer of sand filling gullies and rivulets, as well as helping to drain areas with organic matter at the surface, will be added prior to vegetation to smooth out the bank face.

The Massachusetts CZM recommends the use of American beachgrass as the most appropriate species for stabilizing coastal banks, due to its fast-growing, dense root system and its tolerance

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of salt spray and exposure to wind and waves.[16] American beachgrass can hold windblown sediments onto bank or bank faces and bind the soil using its fast-growing, dense root system, which allows other species to colonize at the same site.

Once the beachgrass has been established, other native woody vegetation recommended in the above-referenced CZM website may be planted in the following years, including: Bearberry, Beach Heather, Bayberry, Beach Plum, and Creeping Juniper. Common juniper has been excluded as a potential vegetation type since it has been noted that it does not appear to be native to the coastal bank.

In certain portions of the Project area, swallows (a species that is not state or federally listed) have been known to nest. The Massachusetts Breeding Bird Atlas 2 prepared and maintained by the Massachusetts Audubon Society (Mass Audubon) considers their population stable to increasing on Nantucket. They are not listed as Endangered, Threatened or of Special Concern by the Massachusetts Division of Fisheries and Wildlife. Dr. Robert Kennedy, who has conducted over 95 swallow surveys on the east coast of Nantucket, previously observed:

In the Sankaty Coastal Bank, Bank Swallows only nested 1) where there existed a vertical cliff face of about 5 feet or higher below the top of the coastal bank, 2) within 2 to 4 feet from the top of the coastal bank, 3) where the cliff substrate permitted excavation by the swallows without that substrate collapsing on them, and 4) where the top of the coastal bank is about 25 feet or higher from the active beach.

Much of the Project area does not have suitable habitat for swallows. However, Dr. Kennedy's June 2017 survey[17] indicated that there were concentrated swallow cavities present in the area between 109 and 115 Baxter Road. A significant colony of nests was also observed in this location in 2010. Accordingly, while swallows are not a listed species and their population may be increasing on Nantucket, this concentrated area of swallow cavities is a recognized feature and the upper 5 to 7 feet of the bank will not be vegetated in this area (located between 109 and 115 Baxter Road). In all other areas, where swallow nests are sparse or non-existent, vegetation will occur to the top of the bank to facilitate comprehensive slope stabilization.

Planting of vegetation will not require equipment on the beach or any access via Hoick's Hollow. Planting will be accomplished by workers on the face of the bank, with access from the top. To ensure vegetation efforts are successful, a minor addition of sand will be added as needed to prepare the planting bed by smoothing out some of the deeper rills and gullies.

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[16] https://www.mass.gov/service-details/landscaping-a-coastal-bank

[17] Bank Swallow (*Riparia riparia*) Survey Results and Habitat Requirements along the Coastal Bank of Nantucket from Hoicks Hollow Road to 85 Baxter Road, Robert S. Kennedy, Ph.D. Ornithologist, July 3, 2017.

4.9 Water Management

It is possible that water from runoff down the bluff face contributes to bluff erosion. Land use generates stormwater runoff from impervious surfaces including roofs and paved roads and driveways, and also the overwatering of lawns may occur. Review of the recent aerial photographs of Sconset Bluff in **Figure 5** indicates that the primary erosion process is toe erosion, slope over steepening, and slope failure. A few exceptions are observed, and Bluff erosion fronting those lots may include overbank surface runoff as a contributing factor. Those lots are 71, 87, 107, and 113 through 117 Baxter Road. On those lots the applicants will work with individual landowners and or an adjacent owner, if necessary, to adjust site grading, landscaping and irrigation to prevent overbank runoff.

4.10 Public Access

Beaches are a natural resource ideally suited for public recreation. The public has a right to access the Baxter Road beach, however without current steps or access use of this beach area is limited. Consistent with national trends toward greater public access, this NOI proposed to expand public beach access rights by adding one or two new steps down to the beach following full review, engineering, and safety of the steps. Steps to the beach will increase recreational use of the area adding to the current walkers, runners, birders and fishers in the area.

- The Applicants proffer to take best efforts to improve the recreational use along Baxter Road by installing public seating in a viewing area.
- The Applicants will continue to clean the beach of debris and trash as needed.
- The Applicants (SBPF and TON) will work collaboratively to install one pet waste station in the Project area.
- The TON will assign a beach access numbers to the access points.
- The Applicants will engage an engineer to evaluate the feasibility of installing a safe and reasonably practical public access stairs or ramp down the Coastal Bank to the template in one or two locations in the Project area. This also includes the installation of seasonal (summer season) stairs from the template to the beach. The TON will own and maintain the stairs following construction.
- The TON will regularly monitor the public water quality of the beach, if and following, public beach access is provided.

5.0 Alternatives Considered

The SBPF has been focused on identifying and implementing effective Coastal Bank stabilization for the Sconset Bluff for over 20 years. This alternatives assessment identifies the measures that the SBPF has evaluated in theory and practice over the past two decades. Those measures include both structural and non-structural stabilization techniques. After all of these attempted techniques, implementation of the pilot project has demonstrated that the geotube system is

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effective protecting the bluff from erosion and has resulted in no adverse effects to downdrift resource areas. Therefore, the geotube system is the preferred alternative. Following is a summary of measures in chronological order pursued by the SBPF and Baxter Road homeowners:

- Managed retreat (house moves): Review of Nantucket Building Department files shows that 18 houses on the 35 lots (27 buildings presently along this stretch of Baxter Road) on the east side of Baxter Road between 41 and 119 Baxter Road have been moved off the lot or further away from the Coastal Bank on the same lot (these include house numbers 119, 117, 115, 109, 105, 101, 99, 97, 93, 87, 85, 83, 77, 73, 71, 67, 55 and 51 Baxter Road).
- Beach dewatering: (2000 to 2009) yielded inconsistent results.
- Coir reinforced coastal terraces: (DEP File No. SE48-1659, February 2004) were installed but have not been effective for intense storm events. See photos 1 – 5 below which show active erosion above existing coir terraces.
- Drainage wells: (DEP File No. SE48-1773, February 2004). These did not yield beneficial results.
- Beach nourishment: (EOEA No. 13468, 2006 / 2007) proposal was denied.
- Large-scale sacrificial Dune. The pre-existing natural dune along the eastern shoreline has been eroding from north to south starting in the 1970's. Concurrent with this change, the fronting beach has narrowed, which limits the available land area to construct a large-scale sacrificial dune. This option would require extensive beach nourishment to first create and suitable base for a dune (essentially a sand foundation) then a placing a large mass of sand to construct the dune. This would be similar to the large-scale beach nourishment pursued in 2006/2007 and which was denied. Therefore, this was not considered a viable alternative.
- Marine mattresses and gabions: (DEP File No. SE48-2395, 2010 / 2011) proposal was denied.
- Revetment project: (DEP File No. SE48-2581 – July 2013) NOI was withdrawn after a settlement was agreed upon allow the geotube project to proceed (authorized per SOC SE48-2610 and OOC SE48-2824).
- Living Shoreline: This alternative was assessment qualitative in 2020 for the "Working Group." This alternative would involve constructing a vegetated coastal landform seaward from the toe of Coastal Bank, possible living shorelines here include a sacrificial dune and possibly a salt marsh. Review of the eastern coastline of Nantucket shows there are no salt marshes along this shoreline because this is a high wave energy environment making it not suitable for salt marshes; therefore, this option was not advanced for further consideration.
- Baxter Road Long-Term Planning (2021): Under contract with the Town of Nantucket, Arcadis assessed alternatives to address Sconset Bluff and toe erosion along the bluff. That assessment identified short-, medium-, and long-term measures to address erosion.

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The short-term recommendation was to maintain the existing pilot project. Extending the geotube system with an adaptive sand management program was identified as an effective measure to provide the greatest level of risk reduction to Baxter Road, infrastructure and homes.

Several of the alternatives listed above included "soft structures" or non-invasive measures. Those alternatives have not been adequate to protect the Coastal Bank from erosion during large and sequential storms as demonstrated by their failure in the winter of 2012-2013.

Based on the performance of the approximately 950-foot pilot project over the past eight storm seasons to stabilize the protected bluff, including the series of March 2018 Nor'easters, as well as the independent assessment of alternatives performed in 2021, the extension of the geotube array covered by a sand template and with the template managed pursuant to the proposed adaptive sand management plan is identified as the preferred project. The pilot project proves the effectiveness of a geotube array with sand template to stabilize the bluff with no adverse effects observed to the fronting, adjacent or downdrift beaches and dunes. None of the other alternatives identified above were approved or proved to be effective at protecting the bluff from erosion.

5.1 Project-Impact Analysis of Protected Interests of Coastal Bank and Coastal Beach Resource Areas

The following is a review of how the proposed project protects the interest of the Bylaw.

Bank Height – The project will not alter, and therefore have no adverse effect on the height of the bank.

Bank Stability – The project is proposed to improve the stability of the bank.

Wildlife Habitat – The project will have no adverse effect on wildlife by complying with the conditions established by the NHESP and avoiding work in the upper the reaches of the bluff where bank swallow nests are present.

Vegetation – The project includes re-planting the exposed bluff to stabilize the exposed soils and augment wildlife habitat attributable to a vegetated slope.

Bank as a Sediment Source – The project includes establishing a sand template (on-site sand stockpile) with 22 cy/lf to contribute sediment to the littoral drift system to compensate for the protected bluff face. The template sand is used to re-cover exposed geotubes after storms that erode sand on the face of the geotubes. Sand will be contributed annually to the template to ensure there is an adequate volume of sand on the template to re-cover exposed geotubes. See Table 4.

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Wetland Scenic Views – The project will have no adverse effect on the wetland scenic views because the re-planted bluff face and sand template will look similar to existing conditions – i.e. vegetated bluff with the lower bluff comprised of exposed sand.

Public or Private Water Supply – The project will not interfere with water supplies in any way, and therefore will have no impact on public or private water supplies.

Groundwater – The project will have no impact to groundwater. No dewatering or handling of water is proposed as part of this project.

Flood Control – The project is proposed to protect the interest of the bluff to control flooding.

Erosion Control – The project is proposed to stop bluff erosion, therefore the project positively affects the interest of erosion control.

Storm Damage Prevention – The project is proposed to protect existing pre-1978 homes and public infrastructure from storm damage caused by bluff erosion. Therefore, the project improves the capacity of the bank to provide storm damage prevention.

Water Pollution – The project will not cause pollution of surface water or groundwater. The project protects the sanitary sewer system infrastructure within Baxter Road and prevents a breach of the system which could pollute surface water.

Fisheries – The project will have no direct impact on fisheries because the project is located landward of the mean high-water line. Concerns of cobble bottom offshore from the pilot project being lost due to the cobble being covered by sand resulted in the need to monitor the cobble habitat two times per year since the pilot project was installed. Seven years of observation show the pilot project has not caused an observable change (loss or gain) over the past eight years. Thus, using the pilot project as a guide, no direct or indirect alteration of bottom substrate is anticipated for the proposed extension project. This is expected since the sand contribute off the pilot template is approximately the same (slightly greater) the pre-construction Bluff contribution rate. The adaptive sand management program proposed in this project should help avoid indirect impacts to nearshore substrate type as compared to a requirement to contribute a fixed annual sand volume to the littoral system.

Shellfish – The project will have no adverse impact on shellfish because the project is located landward of the mean high-water line. Seven years of annual monitoring of the benthic habitat offshore of the existing project has not revealed any adverse effects to shellfish habitat

Rare Species – The NHESP previously determined the project will not adversely affect habitat of state-listed species and identified conditions to protect state listed species. The applicant has agreed to abide by those conditions.

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Recreation – The project will have no adverse impact on recreation because the use of the property is not changing. Access across the beach in the intertidal zone will be maintained. The project will add recreational amenities and aim to increase public access opportunities.

Near-term and Long-term resources-area impacts – Establishing the sand template and contributing sand off the template to the beach, at a rate at least equal to the calculated contribution of the existing unprotected bluff, will contribute sand to the littoral drift system to protect nearby beaches and dune. Seven years of monitoring for the existing project has not documented any adverse effects to adjacent coastal beaches as result of the project.

6.0 Monitoring, Maintenance, and Reporting

6.1 Monitoring

Field monitoring consists of bank and beach monitoring performed annually. Survey standards will be consistent with the Southeast Nantucket Beach Monitoring surveys that have been completed by the Woods Hole Group, dating back to 1994.

Project monitoring will be conducted for several purposes:

1. to track the sand contributed off the template into the littoral drift system,
2. to document conditions adjacent to the geotube system and monitor changes, if any, to adjacent beaches; and
3. to track sand volume on the template to ensure adequate sand is present atop the template to replenish the template face after erosion events.

Transect locations are presented in **Figure 16 – Shoreline Monitoring Survey Transects** and **Figure 17 – Shoreline Monitoring Survey Transects in Project Area.** A comparison of existing and proposed monitoring is presented in Table 5 below.

Table 5 Comparison of Existing and Proposed Monitoring Activities

Existing Monitoring Program:	**Proposed Monitoring Program**
▪ Shoreline change quarterly; ▪ Bathymetric Survey semi-annually; ▪ Underwater video semi-annually; ▪ Post-storm inspections; ▪ Template survey annually.	▪ Shoreline change quarterly for Year 1 post-construction; ▪ Shoreline change monitoring semi-annually after Year 1 – spring and fall; ▪ Bathymetric Survey semi-annually – spring and fall; ▪ Template transect survey semi-annually – summer and winter; ▪ Underwater video once every 3 years; ▪ Post storm inspections ▪ Template topographic survey annually – spring

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6.1.1 Bank Topographical Surveys

Topographic surveys using airborne (i.e., drone mounted) Light Detection and Ranging ("LiDAR") survey techniques will be conducted once per year, typically during the quarter ("Q") 2. Positioning control will be achieved with Real Time Kinematic (RTK) GPS with a 2.5 cm horizontal and 5 cm vertical accuracy[18]. These surveys will be used to determine volumetric changes on the template, the bank above the template, and the unprotected bluff 300 feet to the north and south of the geotube system. They also will be used to estimate bank retreat over the previous 12 months in the Project area and the unprotected bank approximately 300 feet north and south of the geotube structure. These surveys are consistent with the current bank topographical surveys performed to monitor the existing geotube pilot project.

6.1.2 Southeast Nantucket Beach Monitoring

The Woods Hole Group Southeast Nantucket Beach Monitoring program will continue. This program includes long-term monitoring and comparison of approximately 46 cross shore beach profiles to assess long-term trends at those profiles. Frequency of shoreline monitoring will be four times per year (quarterly Southeast Nantucket Beach Monitoring) for the first year following construction. Thereafter, the shoreline monitoring will be conducted twice per year in the spring and fall using the same 46 cross shore beach profiles. The purpose of the 46-profile survey is to identify beach changes that may be attributable to the Project, and to monitor the shoreline beyond the influence of the Project.

Profiles for the 46-profile survey extend from the top of the bank / dune to elevation ("el.") -5 feet mean low water ("MLW") to allow the long-term tracking of the shoreline, i.e., the MLW position. The surveys capture the shoreline from the top of the bank / dune / template to el. 0 feet MLW. The position of the el. -5 foot MLW is extrapolated from the surveys beach face slope. Previous analysis of extrapolating the data from el. 0 to el. -5 feet MLW has shown that associated errors between measured el. -5 feet MLW and extrapolated el. -5 feet MLW are small (the average difference in the volume of sand estimated for each profile was 1.1 cy/lf, which equates to a 1.4% difference).[19] The extrapolation method avoids using a rodman to collect the survey data to el. -5 feet MLW (the "wading shots") and eliminates the inherent risks to conducting wading shots. **Figure 17** shows a map of the beach monitoring transects.

To augment the twice a year shoreline survey the Applicants propose to conduct template surveys twice per year, in the summer and winter. These surveys will include five transects oriented along the template: two approximately 200 feet north and south of the template, two approximately 50 feet inboard from ends of template, and one at the midpoint of the template. The 5-profile survey points will be the top of bluff, the bluff – template junction, the midpoint of template, the seaward edge of the template, the toe of the template, and approximately the MHW position.

[18] Woods Hole Group Quarterly Monitoring Data, 2021

[19] Previously provided to the Conservation Commission as Attachment B to the Annual Review - Sconset Geotextile Tube Project, dated December 13, 2016

The purpose of the 5-profile survey is to assess whether the Project is adversely affecting the adjacent beach and to assess the walkable beach criterion.

The proposed monitoring will include quarterly 46-profile surveys for the first year following construction then decreased to twice a year thereafter for 46-profile surveys and twice a year for 5-profile surveys. This exceeds the MassDEP / CZM beach nourishment standards[20] of quarterly for the first-year post-construction and annually every year thereafter for 3- to 5-years.

6.1.3 Bathymetric Surveys

Offshore (bathymetric) single beam profiles are proposed to be conducted twice per year. GPS locations are along each transect with the coordinates provided. These will be conducted in conjunction with the shoreline surveys. These transects are reused for each survey to cover the same areas. Offshore profiles will extend from approximately -5 foot MLW92 to el. -35 foot MLW92 contour or 3,000 feet offshore, whichever is reached first. Bathymetric survey data is processed against the benchmark location for each respective transect to generate a 2-D bathymetric profile from the collected 3-D data. This is then referenced to the same horizonal space as the topographical data. Bathymetry profile data and analysis will be submitted to the NRD within 30 days of completing the survey.

6.1.4 Underwater Video Monitoring

Underwater video monitoring is proposed to be conducted once every three years, in comparison to the underwater video monitoring surveys for the current geotube pilot project which are conducted twice each year. Photographs and video will be taken along the transects seaward of the pilot project (transects 90.6 through 92.5) and the area directly adjacent to the pilot project area. The underwater video will be conducted to characterize the bottom sediments and relative abundance, including the calculation of the percent cobble where appropriate, plus plant and animal species present in the survey area. Video survey results will be submitted to the NRD within 90 days of completing the survey.

Eleven video surveys dating back to June 2016 show no measurable trends that support evidence of a change in benthic habitat and species present. The volume of sand contributed off the template is minimal compared to the volume of native sand moving in the littoral system and shoal movements. Furthermore, the sand contributed off the template is comparable with the sediment volume contributed from the bluff prior to the Pilot Project. Therefore, a reduction in the frequency of underwater video monitoring is warranted, as meaningful data could only be generated in the event that regular monitoring indicated that compensatory sand is contributing to the loss of, or covering of, cobble/boulder substrate. Results of monitoring completed to date do not indicate covering, or loss, of cobble/boulder substrate offshore from the geotube system is occurring.

[20] DEP & CZM. 2007. Beach Nourishment: MassDEP's Guide to Best Management Practices for Projects in Massachusetts. Pg. 31.

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6.1.5 Post-Storm / Erosion Event Visual Inspections

Following all storms or other erosion events such as high seas, SBPF will conduct a visual inspection as soon as possible after the storm has ended to determine and document template erosion, if any. SBPF will identify the location of any exposed geotube or of any repair required to a geotube. It will also make visual observations of the ends of the geotubes to determine if flanking occurred. SBPF will estimate the length of any exposed geotubes and document conditions with on-site photos. Post-Storm monitoring reports will be submitted to NRD no later than seven days from the end of the storm. A blank post-storm monitoring report is presented in **Attachment H – Blank Data Collection Forms.** This monitoring practice is consistent with inspections performed to monitor the existing geotube pilot project.

6.1.6 Weekly Bluff Inspections

The Applicants will continue to conduct weekly inspections to report on template condition, collect and remove trash encountered during these inspections, and report the trash removed. The Applicants will continue to include these reports in the quarterly work reports. A weekly inspection report is presented in **Attachment H.**

6.2 Maintenance

Geotube array maintenance involves routine activities, and post-erosion event maintenance. A blank sand template work report is presented in **Attachment H**.

Routine activities: These activities include the monitoring described above, replenishment of the sand template, and maintenance of the beach access point at the end of Hoicks Hollow Road.

Post-Erosion activities: Following erosion events SBPF will inspect the template and based on those inspections the authorized contractor will recover exposed geotubes, repair the sand delivery point, repair any damaged geotubes, place additional sand as needed, and conduct any other repairs as need to maintain the integrity of the toe protection system.

6.3 Reporting Schedule

6.3.1 Post Storm Reporting

Post-Storm monitoring reports will be submitted following all significant storms. A storm is considered "significant" when there are sustained winds over 40 mph for at least a 6-hour period according to NOAA's National Climate Data Center, Nantucket Memorial Airport station, or equivalent government weather reporting system. The post-storm monitoring report will include, at a minimum, the following:

1. photo-documentation of the condition of the geotubes, template, and the bluff within the project area;
2. an estimate of the volume of sand lost from the sand template;

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3. an estimate of the beach level in front of the geotubes;
4. an estimate of the volume of sand needed to replenish the template (if necessary) and a schedule for its delivery;
5. the location of any exposed geotextile or of any repair required to the geotextile; and
6. a description of the visual observation of the ends of the geotubes to determine if flanking has occurred.

Such reports will be submitted to the NRD as soon as possible following all significant storms but no later than seven days from the end of the storm.

6.3.2 Quarterly Work Reports

The Applicants will submit to the NRD quarterly work reports that include daily work logs documenting project activity during the quarter, post-erosion event template re-grading, sand placement, and other maintenance activities. Work reports will be submitted to the NRD within 30 days of the close of the quarter.

6.3.3 Shoreline Surveys

Beach profile data and analysis and bank topographic surveys will be submitted to the NRD within 30 days following completion of each shoreline survey.

6.3.4 Annual Bathymetric Surveys

Annual bathymetric surveys will be submitted to the NRD within 30 days following the completion of the semi-annual survey.

6.3.5 Benthic Video Monitoring

Photographs and/or video monitoring report of the video monitoring will be submitted to the NRD within 90 days of survey completion.

6.3.6 Annual Reporting

An annual assessment report summarizing the beach and bathymetric profile monitoring program, plus copies of the other reports submitted during the year, will be submitted to the NRD following each sand year. This report will provide, at a minimum, an analysis of beach changes including volumetric changes between surveyed transects, the location of the MLW position, an assessment of the location of the top of coastal bank, an estimate of bank retreat over the previous 12 months, and a calculation of bank volume loss in the project area and to the north and south of the geotubes. In addition, annual reports will recommend any necessary changes to the template monitoring and maintenance program for the Conservation Commission's review and approval. The report also will evaluate shoreline change within the area covered by the quarterly transects.

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6.4 Failure Criteria

6.4.1 Geotube Failure Requirements

The failure criteria recommended for the proposed geotube portion of the Project are the following:

1. Failure to provide the sand compensation as required herein.
2. Failure to repair and/or replace damaged geotextile tubes in a timely manner where repair or replacement is necessary. Repair will be necessitated if 20 feet of exposed geotube is ripped. If repair or replacement cannot be accomplished within 30 days from the date of the damage, SBPF will notify the NRD before 30 days have elapsed and provide a repair schedule for NRD review and approval.
3. Excessive loss in adjacent (within 500 feet of the geotube system) updrift or downdrift beach cross section that can be attributed to the project. If the shoreline monitoring program identifies excessive landward retreat of the MLW position (loss) to the adjacent shoreline as compared to historical data that may be attributable to the Project. Excessive loss is defined as the rate of loss for 5 consecutive years is greater than 25% of the observed rate for the adjacent beach for the 10-year pre-construction period. If this is observed then SBPF will provide notice to the NRD within 30 days of the completion of the quarterly survey.
4. Failure to maintain adequate beach width in front of the Bank. If the beach in the project area erodes so that the position of MHW migrates landward to the seaward edge of the second tier of geotextile tubes for any two consecutive quarterly surveys, then within 30 days of completion of the second quarterly survey SBPF will provide notice to the NRD.
5. Failure to maintain a walkable beach in front of the geotextile tubes during non-storm conditions. Failure will occur if the beach on the seaward side of the Coastal Bank is not a minimum of 10 feet wide during non-storm periods for the majority (100 or more days) of two consecutive quarters, considering storms, tides, wave runup and similar conditions. It is understood that the portion of the beach in front of the geotextile tubes is by definition narrower than nearby unprotected beaches because the geotextile tubes and the sand template cover the back of the beach. Upon such a failure SBPF, will provide notice to the NRD within 30 days.

The TON and SBPF propose that failure of the Project be assessed separately for the various components and portions of the Project. For example, a failure of the geotubes in one location should not require removal of other portions of the geotubes that continue to function well. Nantucket's coastline is dynamic, and responsible stewardship of the Project will require flexibility in the future as climate change, sea level rise, and other global forces continue to shape the coast and impact the Project in ways that might not be foreseeable at this time.

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6.4.2 Coir Terraces Failure Criteria

Failure criteria for the coir terrace portion of the project is outlined in Section 4.1 as the tipping point trigger to switch from coir terraces to geotubes. This occurs when toe of bluff erosion and mid-slope erosion / failure is observed even with coir terraces in place. Toe of bluff erosion is when at least 100 feet of continuous toe is observed to be eroded behind the coir terrace during the spring inspection –after the winter storm season. Mid-slope erosion and slope failure above the coir terrace are observed to have rill erosion and denuded slopes along the rills and/or where blocks of vegetated slope have sloughed down the slope leaving an unvegetated fissure between the sloughed vegetation and stable vegetation.

After Phase 2 is initiated, removal of coir terraces will occur within 90 days of the confirmed failure, and the administrative approval process included as a Special Condition in the OCC will be followed to convert the coir terrace section to a geotube section.

6.4.3 Dune Nourishment Failure Criteria

Failure criteria for the dune nourishment portion of the project is outline in Section 4.1 as the tipping point trigger to switch from dune nourishment to coir terraces. If needed, sacrificial dune sand placement will be replaced with coir terraces and a sand template. The tipping point trigger to switch from dune nourishment and monitoring to coir terraces is the permanent loss of Coastal Dune at the toe of the bluff. Permanent loss is defined as the loss of Coastal Dune for three consecutive years based on annual surveys.

6.4.4 Administrative Non-Compliance

Administrative requirements are essential to report on the conditions of the toe- protection measures installed along Sconset Bluff to document compliance with the OOC. Thus the following administrative requirements are proposed to be met, otherwise action by the Commission to compel the Applicants to comply will be imposed.

1. Conduct the shoreline monitoring and post-storm monitoring as required herein.

2. Maintain all required insurance, permits and licenses.

3. Meet reporting requirements or good faith effort to provide required reporting. Any anticipated delays in reporting are to be communicated to the NRD at least 10 business days before the report is expected to be submitted.

In conclusion, should any of the failure criteria be met or administrative requirements not be met, the Applicants will schedule an appearance with the Commission for the impacted area or portion. The Commission will review the missed criteria or reporting and determine how Applicants will address it. The Commission should focus its review on the component or portion of the Project at issue, rather than placing well-functioning portions of the Project at risk needlessly. In the event removal of a portion of the geotextile system is ordered, then the geotextile fabric shall be cut,

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removed, and properly disposed of. Following the removal of a portion of the geotextile fabric, sand from the geotextile tubes will be spread along the beach landward of MHW. SBPF and the Town will maintain the escrow fund in place as of the date of the Order of Conditions for the Existing Project (9/30/2015), which will be increased in amount, and a performance bond to ensure the availability of funds to pay for the removal of the geotextile tubes in the event removal becomes necessary.

7.0 Regulatory Consistency

In reviewing this NOI, the Commission should focus its attention on ensuring that the Project meets the performance standards applicable to the Project under the Act, the Bylaw, and the Regulations. So long as the Project (properly conditioned) meets those standards, it should be approved. The Commission should not allow project opponents to distract attention from the applicable standards and should not entertain arguments that the Project should be denied for other reasons outside of the applicable regulatory framework.

The installation of the geotextile tubes and associated Project components will occur on and proximate to Coastal Beach, Coastal Dune, Coastal Bank, and LSCSF through the construction of the geotextile system, coir terraces and sacrificial dune. The project will also temporarily impact Coastal Beach through the use of temporary water source trenches. These temporary trenches will be located landward of the Mean High Water ("MHW") line and will be used as a water source for the sand/water slurry used to fill the geotextile tubes. After the geotextile tubes are filled, the water source trenches will be backfilled and the beach will be restored. Accordingly, the following resource areas will be altered by the Project:

Table 6 Full Build Wetland Resource Impacts (Phase 1 & 2)

Wetland Resource Area	Impacts (Linear Feet [LF] or Square Feet [SF])
Coastal Beach	116,700 SF Permanent/Geotubes* 89,600 SF Temporary/Water Source Trench and Template Toe 15,600 SF Temporary/Sacrificial Dune
Coastal Dune	0 SF
Coastal Bank	2,000 LF Geotubes and Sacrificial Dune
Land Subject to Coastal Storm Flowage	16,400 SF Geotubes

* Includes both the geotextile tubes and scour apron buried beneath the beach and the geotextile tubes installed above the beach level.

The Project's consistency with the state and local wetlands regulations applicable to work in these resource areas is presented below.

7.1 Review of Key Project Elements

Key elements of the proposed Project have been reviewed by the MassDEP through review of the previous Sconset Bluff stabilization projects. By the issuance of the previous SOC (SE48-2824)

MassDEP confirms that: (1) a geotube CES protects the interests of the Act, namely storm damage prevention and flood control, and (2) key Project elements comply with the state Regulations. Those Project elements include the following:

- The standard compensatory sand volume equation (retreat rate x bank height x bank length) is the standard equation to determine compensatory sand volume,
- The homes present on the east side of Baxter Road are pre-1978 buildings,
- The existing pilot project has not damaged adjacent downdrift beaches,
- The extension of the CES across vacant lots (i.e., gap lots) is allowed,
- An adaptive sand management plan is acceptable, in principle (the SOC for SE48-3115 allowed for a transition to an adaptive sand management program), and
- A reduced monitoring program is acceptable, in principle (the SOC for SE48-3115 allowed for a reduction in the monitoring plan).

7.2 Compliance with State Wetlands Regulations

As described in Section 3.2, the installation of the Project requires authorization under the WPA and accompanying regulations for work occurring in and proximate to Coastal Bank, Coastal Beach, and Land Subject to Coastal Storm Flowage, and for work proximate to Coastal Dune. The protected interests within the wetland resource areas of the project area include storm damage prevention, flood control, and protection of wildlife habitat.

The following sections document how the proposed bluff stabilization and resiliency project meets all of the performance standards applicable to the Project under the WPA. They also establish how the Project will serve the interests of storm damage prevention, flood control, and the protection of wildlife habitat.

310 CMR 10.21 identifies that the performance standards are established to protect the characteristics of the resource areas and directs the proper focus of the Commission's review of this NOI under the Act to protect the interests of the Act. The Coastal Bank is significant to storm damage prevention and flood control. The basic project purpose is to protect these interests by: (1) protecting the stability of the Coastal Bank with geotubes, and (2) continuing to supply sediment of the littoral drift system via the construction and maintenance of the sand template.

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7.2.1 Coastal Beaches (310 CMR 10.27)

The state wetlands regulation at 310 CMR 10.27(2) includes the following conditions:

"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."

The coastal beach in the Project area dissipates wave energy, reduces the height of approaching waves, and acts as a sand source to nearby coastal landforms. It also provides habitat for non-listed and listed foraging shorebirds. As such, the coastal beach is significant to storm damage prevention, flood control, and the protection of wildlife habitat. As discussed below, the Project will comply with the state regulations for coastal beaches found at 10.27(3) through (7).

310 CMR 10.27(3) – Performance Standard

"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."

Project Compliance: The Project is being permitted under 310 CMR 10.30(3)(a). Therefore, this standard does not apply.

310 CMR 10.27(4) – Performance Standard

"Any groin, jetty, solid pier or other such solid fill structure which will interfere with littoral drift, in addition to complying with 310 CMR 10.27(3), shall be constructed as follows:

(a) It shall be the minimum length and height demonstrated to be necessary to maintain beach form and volume. In evaluating necessity, coastal engineering, physical oceanographic and/or coastal geologic information shall be considered.

(b) Immediately after construction any groin shall be filled to entrapment capacity in height and length with sediment of grain size compatible with that of the adjacent beach.

(c) To transfer sediments to the downdrift side of the inlet or shall be periodically redredged to provide beach nourishment to ensure that downdrift or adjacent beaches are not starved of sediments."

Project Compliance: This standard does not apply. The Project is located above the zone of littoral drift (i.e., at the landward edge of the coastal beach).

310 CMR 10.27(5) – Performance Standard

"Notwithstanding 310 CMR 10.27(3), beach nourishment with clean sediment of a grain size compatible with that on the existing beach may be permitted."

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Project Compliance: The beach nourishment provided as part of the Project will be provided by clean sand from on-island or off-island sources as described above in Section 4.6 of this NOI. This section also presents proposed methods to evaluate sand for cleanliness and grain size compatibility and to ensure it is considered free of anthropogenic contamination (see **Appendix G**).

310 CMR 10.27(6) – Performance Standard

"In addition to complying with the requirements of 310 CMR 10.27(3) and 10.27(4), a project on a tidal flat shall if water-dependent be designed and constructed, using best available measures, so as to minimize adverse effects, and if non-water-dependent, have no adverse effects, on marine fisheries and wildlife habitat cause by:

(a) alterations in water circulation,

(b) alterations in the distribution of sediment grain size, and

(c) changes in water quality, including, but not limited to, other than natural fluctuations in the levels of dissolved oxygen, temperature or turbidity, or the addition of pollutants."

Project Compliance: This standard does not apply. The Project does not include any work on a tidal flat, which is defined at 310 CMR 10.27(2) as *"any nearly level part of a coastal beach which usually extends from the mean low water line landward to the more steeply sloping face of the coastal beach, or which may be separated from the beach by land under the ocean."* All proposed Project activities will occur on the coastal bank and at the toe of the coastal bank on a narrow strip of the coastal beach well landward of and above the steeply sloping beach face.

310 CMR 10.27(7) – Performance Standard

"Notwithstanding the provisions of 310 CMR 10.27(3) through 10.27(6), no project may be permitted which will have any adverse effect on specified habitat sites or rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.37."

Project Compliance: The Project area for initial installation of the geotubes and coir terraces is outside estimated habitat indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetlands Wildlife published by the NHESP (see **Figure 13**). Prior coordination with NHESP resulted in conditions for use by the Conservation Commission, see **Attachment F – NHESP Correspondence,** to include and in an OOC to adequately protect the state-listed species and their habitat. We expect similar conditions for this proposed Project.

7.2.2 Coastal Dune (310 CMR 10.28)

The state wetlands regulations, at 310 CMR 10.28, include the following condition:

"When a coastal dune is determined to be significant to storm damage prevention, flood control or the protection of wildlife habitat, 310 CMR 10.28(3) through (6) shall apply."

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310 CMR 10.28(3) – Performance Standard

"Any alteration of, or structure on, a coastal dune or within 100 feet of a coastal dune shall not have an adverse effect on the coastal dune by:

(a) affecting the ability of waves to remove sand from the dune;

(b) disturbing the vegetative cover so as to destabilize the dune;

(c) causing any modification of the dune form that would increase the potential for storm or flood damage;

(d) interfering with the landward or lateral movement of the dune;

(e) causing removal of sand from the dune artificially; or

(f) interfering with mapped or otherwise identified bird nesting habitat."

Project Compliance: No work is proposed on the narrow, natural Coastal Dune at the toe of the Coastal Bank, and work proximate to the natural dune is designed to have no adverse effect on the Coastal Dune, but rather to augment the dune and its function. Work proximate to the dune includes installation of a sand covered coir terrace (Phase 1) and the geotube system (Phase 2) to the north of the natural dune and a sacrificial dune seaward of the natural dune. The following is a review of sub-standards (a) through (f):

(a) affecting the ability of waves to remove sand from the dune

The sand covered coir terrace and geotube system located to the north of the natural dune will not interfere with wave action or the removal of sand from the dune by waves. The proposed sacrificial dune, installed seaward of the natural dune, is proposed to intercept wave action before it interacts with the natural dune. Sand will be removed from the sacrificial dune first, and once it is lost (or "sacrificed") waves will interact with the natural dune and remove sand from the natural dune.

(b) disturbing the vegetative cover so as to destabilize the dune

The sand covered coir terrace and geotube system located to the north of the natural dune will not disturb vegetation on the narrow, natural dune. The proposed sacrificial dune, installed seaward of the natural dune, is designed and will be installed to avoid covering vegetation on the natural dune.

(c) causing any modification of the dune form that would increase the potential for storm or flood damage

No modification of the dune is proposed or will occur from the sand covered coir terrace or geotubes. The sacrificial dune is proposed to augment sand volume of the fronting dune to increase its capacity to protect the Coastal Bank from storm and flood damage.

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(d) interfering with the landward or lateral movement of the dune

The existing Coastal Bank prevents landward movement of the dune. The Project will not change this situation. Since the 1970's the Coastal Dune along Sconset Bluff has been lost, with loss progressing from north to south. The proposed Project only will involve installing the sand covered coir terrace after the narrow Coastal Dune has been permanently lost. Permanent loss is defined as the natural dune being observed to be lost (eroded) during three consecutive annual inspections conducted in the late summer / early autumn.

(e) causing removal of sand from the dune artificially

No sand will be removed from the natural dune. The proposed Project is expected to add sand to the dune (1) indirectly from sand off the sand covered coir terrace of geotube template by wind or wave action and (2) directly from the sacrificial sand being placed seaward of the natural dune.

(f) interfering with mapped or otherwise identified bird nesting habitat

The Applicants are committed to working with NHESP to develop and comply with conditions, including time of year restrictions to avoid interference with nesting shore bird habitat.

310 CMR 10.28(4) – Performance Standard

"Notwithstanding the provisions of 310 CMR 10.28(3), when a building already exists upon a coastal dune, a project accessory to the existing building may be permitted, provided that such work, using the best commercially available measures, minimizes the adverse effect on the coastal dune caused by the impacts listed in 310 CMR 10.28(3)(b) through (e). Such an accessory project may include, but is not limited to, a small shed or a small parking area for residences. It shall not include coastal engineering structures."

Project Compliance: No building accessories or CESs are proposed on or fronting the coastal dune.

310 CMR 10.28(5) – Performance Standard

"The following projects may be permitted, provided that they adhere to the provisions of 310 CMR 10.28(3):

(a) pedestrian walkways, designed to minimize the disturbance to the vegetative cover and traditional bird nesting habitat;

(b) fencing and other devices designed to increase dune development; and

(c) plantings compatible with the natural vegetative cover."

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Project Compliance: This standard does not apply. The Project does not include any proposed walkways, fencing, or plantings on the coastal dune.

310 CMR 10.28(6) – Performance Standard

"Notwithstanding the provisions of 310 CMR 10.28(3) through (5), no project may be permitted which will have any adverse effect on specified habitat sites of Rare Species, as identified by procedures established under 310 CMR 10.37."

Project Compliance: Mapped habitat includes Coastal Dune in Reach 5. Sand placement activities will occur in the autumn to avoid nesting season for the protection of shorebird species. Prior coordination with NHESP resulted in conditions for use by the Conservation Commission, see **Attachment F**, to include in an OOC to adequately protect the state-listed species and their habitat. We expect similar conditions for this proposed Project.

7.2.3 Coastal Bank (310 CMR 10.30)

The state wetlands regulation at 310 CMR 10.30 includes the following conditions:

"When a coastal bank is determined to be significant to storm damage prevention or flood control because it supplies sediment to coastal beaches, coastal dunes or barrier beaches, 310 CMR 10.30(3) through (5) shall apply.'

"When a coastal bank is determined to be significant to storm damage prevention or flood control because it is a vertical buffer to storm waters, 310 CMR 10.30(6) through (8) shall apply."

The Coastal Bank in the Project area supplies sand to nearby coastal landforms; therefore, it is significant to storm damage prevention and flood control. The Coastal Bank in the Project area also is significant to storm damage prevention and flood control because it is a vertical buffer to storm waters. The following sections describe how the Project design complies with state regulations for coastal banks (310 CMR 10.30(3) through (8)).

310 CMR 10.30(3) – Performance Standard

"No new bulkhead, geotextile tube, 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 1.21 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) a coastal engineering structure or 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, 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."

Project Compliance: The Project is necessary to prevent storm damage to buildings and public infrastructure constructed prior to August 10, 1978, including reconstructions of such buildings. **Figure 7** shows which lots have pre-1978 structures or houses on them and Section 2.3 demonstrates that protection throughout the Project area is required to protect pre-1978 homes. The Project conforms to the sub-standards of this regulation, as described below.

(a) a coastal engineering structure or 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

The geotextile system was designed and will be constructed using best available measures to minimize adverse effects on adjacent or nearby coastal beaches caused by changes in wave action. Best Available Measures are defined at 310 CMR 10.04 as *"the most up-to-date technology or the best designs, measures or engineering practices that have been developed and that are commercially available."* Elements include in the design to minimize effects include:

1. The sloped seaward face of the geotube system and sand template minimizes wave reflection or focusing wave energy on adjacent Coastal Beach.

2. The shallow angled returns and sand covered returns minimize wave refraction to decrease wave energy on the abutting Coastal Bank.

3. Sand mitigation is proposed to minimize potential alteration to the adjacent Coastal Beach by extending the length of the geotube stabilization system. Sand eroded off the face of the geotubes during coastal storms will be translocated by sediment transport processes, i.e., cross shore transport and long shore transport mechanisms, making it available to the regional Sconset coastal littoral drift system, comprised of Coastal Beach, Land Subject to Tidal Action, and Land Under the Ocean.

(b) the applicant demonstrates that no method of protecting the building other than the proposed coastal engineering structure is feasible.

The Alternatives Analyses described in Section 5 above demonstrates that there is no other feasible method of protecting the existing buildings in the Project area other than the proposed geotextile tubes.

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(c) Protective planting designed to reduce erosion may be permitted."

The Project design includes native vegetation plantings to protect the upper bank face and reduce runoff-related erosion. See the project description in Section 4.9 above.

310– CMR 10.30(4) - Performance Standard

"Any project on a coastal bank or within 100 feet landward of the top of 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."

Project Compliance: The Project is being permitted under 310 CMR 10.30(3), and thus this standard does not apply.

310– CMR 10.30(5) - Performance Standard

"The Order of Conditions and the Certificate of Compliance for any new building within 100 feet landward of the top of a coastal bank permitted by issuing authority under M.G.L. c. 131, § 40 shall contain the specific condition: 310 CMR 10.30(3), promulgated under M.G.L. c. 131, § 40, requires that no coastal engineering structure, such as a bulkhead, geotextile tube, or seawall shall be permitted on an eroding bank at any time in the future to protect the project allowed by this Order of Conditions."

Project Compliance: This standard does not apply. The proposed Project does not include the construction of any new buildings.

310– CMR 10.30(6) - Performance Standard

"Any project on such a coastal bank or within 100 feet landward of the top of such a coastal bank shall have no adverse effects on the stability of the coastal bank."

Project Compliance: The Project was designed to improve the stability of this eroding Coastal Bank in accordance with 10.30(3). Installation of the geotube system is designed to stabilize the toe of the bank by preventing toe erosion, see Project Plans in **Attachment I**. Monitoring of the pilot project over the past eight years demonstrates the geotube system has prevented bluff retreat, and serves a directly applicable case study demonstrating the efficacy of this design to stabilize the bluff. The coir terraces are proposed as an interim measure during Phase 1. This system is not as effective as the geotube system to stabilize the bluff, however it does improve stability and slows bluff erosion, as demonstrated by the presence of coir terrace fronting 79 Baxter Road.

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310– CMR 10.30(7) - Performance Standard

"Bulkheads, geotextile tubes, 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."

Project Compliance: As described above, the Coastal Bank in the Project area provides sand to the Coastal Beach and adjacent littoral drift system. However, the Project is designed to stabilize the existing bank face in accordance with 310 CMR 10.30(3) and sand compensation and shoreline monitoring will be conducted to ensure that downdrift beaches are not adversely affected.

The proposed sand template covering the geotubes and coir terraces is provided to ensure sediment is contributed off the templates to compensate for the installation of the CES and coir terrace. The retreat rate and annual sand contribution of the unprotected bluff, in front of which the CES and coir terraces, were calculated and presented above in Section 4.4. In summary, the plan for the geotube system is to "fill" the template at a rate of 22 cy/lf and then monitor the annual rate of sand off the template and "re-fill" the template each autumn before the next winter storm season. As demonstrated in Table 4 the filled template provides 2.4 to 14.7 years of sand based the annual contribution from the unprotected bluff face.

The coir terrace sand template will be established with 1.4 cy/lf of sand to match the calculated rate of sand contribution from the most northerly portion of Reach 4. This is in addition to loss of native sand from behind the coir terraces which occurs with these systems.

310– CMR 10.30(8) - Performance Standard

"Notwithstanding the provisions of 310 CMR 10.30(3) through (7), no project may be permitted which will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.37."

Project Compliance: The Project area for initial installation is largely outside estimated habitat indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetlands Wildlife published by the NHESP[21] (see **Figure 13**). The beach fronting Lot 63 and south is within mapped habitat. Prior coordination with NHESP resulted in conditions for use by the Conservation Commission, see **Attachment F**, to be included in an OOC to adequately protect the state-listed species and their habitat. We expect similar conditions for this proposed Project. This NOI is filed as a joint WPA and MESA application; thus a new NHESP consultation will occur for this Project.

[21] NHESP 2017 Atlas, MassGIS

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7.2.4 Land Subject to Coastal Storm Flowage

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for the Project area, which defines the 100-year storm elevations, is provided as **Figure 12**.

Project Compliance: There are no performance standards in the state wetlands regulations for Land Subject to Coastal Storm Flowage (LSCSF). However, since LSCSF overlays the coastal beach and the coastal bank up to the 100-year storm elevation as shown on **Figure 10**, the relevant performance standards have been reviewed and addressed above.

7.3 Compliance with Local Wetlands Regulations

The Project requires authorization under the Nantucket Wetlands Bylaw and Regulations for work occurring within the following wetland resource areas: Coastal Bank, Coastal Beach, and Land Subject to Coastal Storm Flowage. The protected interests within these wetland resource areas include storm damage prevention, flood control, protection of wildlife habitat, and wetland scenic views.

7.3.1 Nantucket Coastal Beaches (Section 2.02)

Performance Standards for coastal beaches are set forth in Section 2.02 B of the local wetlands regulations, which provide that "*[a] Coastal Beach, Tidal Flat or Land within 100 feet of a Coastal Beach or Tidal Flat shall be presumed significant to the interests Protected by the Bylaw, as referenced in Section A, therefore the following regulations shall apply:"*

The Project <u>does not include</u> activities or structures subject to the following performance standards, and hence they are excluded from the subsequent discussion:

- Section 2.02 B(3) (dredging);
- Section 2.02 B(5) (septic systems);
- Section 2.02 B(6) (non-water dependent activities);
- Section 2.02 B(7) (new buildings); and
- Section 2.02 B(8) (vehicular access for houses and recreational areas).

The remaining applicable sections of the local wetlands regulations pertaining to coastal beach are addressed below.

<u>Section 2.02 B(1) – Performance Standard</u>

"The provisions of Section 2.01 B(1-8) (Land Under the Ocean) shall apply to coastal beaches and tidal flats."

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Project Compliance: "Land Under the Ocean" is not defined in the local wetlands regulations. Therefore, in accordance with Section 1.02, *"To the extent not defined herein or in the Bylaw, words used in the Bylaw or in the regulations shall have the definitions contained in the Massachusetts Wetlands Protection Act (M.G.L. c. 131, sec. 40) and the rules and regulations promulgated thereunder."*

Land Under Ocean is defined in 310 CMR 10.25(2) As, "… land extending from the mean low water line seaward to the boundary of the municipality's jurisdiction and includes land under estuaries."

The Project does not involve any work seaward of the mean low water line; therefore, none of the performance standards at Section 2.01 B (1 - 8) of the Bylaw Regulations apply. However, even if these performance standards were applied to Coastal Beach, these standards do not apply to this Project because it does not include dredging, piers or aquaculture activities.

- Section 2.01 B(1) (improvement and maintenance dredging);
- Section 2.01 B(2) (dredging);
- Section 2.01 B(3) (residential piers);
- Section 2.01 B(4) (commercial piers);
- Section 2.01 B(5) (commercial or residential piers);
- Section 2.01 B(6) (aquaculture); and
- Section 2.01 B(9) (non-water dependent project).

If Section 2.01 B were applied to the work proposed on Coastal Beach, the only standards in Section 2.01 B that would be relevant are those provided in 2.01 B(7) (coastal engineering structure) and 2.01 B(8) (water dependent project), which are both discussed below for informational purposes only.

Section 2.01 B(7) – Performance Standard

"No new bulkheads or coastal engineering structures shall be permitted to protect structures constructed or substantially improved after 8/78. Bulkheads may be rebuilt only if the Commission determines that there is no environmentally better way to control an erosion problem, including in appropriate cases the moving of the threatened building. Other coastal engineering structures may be permitted only upon a clear showing that no other alternative exists to protect a structure built prior to 9/78, but not substantially improved, from imminent danger."

Project Compliance: Project compliance with the language of this standard is described below under Section 2.02 B(2) – Performance Standard. Project eligibility pursuant to both the WPA and Bylaw is presented in Section 2.4.

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Section 2.01 B(8) – Performance Standard

"Water dependent projects shall be designed and performed so as to cause no adverse effects on wildlife, erosion control, marine fisheries, shellfish beds, storm damage prevention, flood control, and recreation."

Project Compliance: As described in Section 2.05 B(5) – Performance Standard, the Project is water dependent because it requires direct access to the coastal bank and landward portion of the coastal beach.

- Wildlife: See previous discussion under Section 2.05 B(3) – Performance Standard.
- Erosion Control: The Project will have a positive effect on erosion control, as it will protect the Coastal Bank from wave-induced erosion and sand compensation will be added to mimic the natural sand supply from the coastal bank.
- Marine Fisheries and Shellfish beds: No Project activities will occur seaward of Mean Low Water, and hence the Project will not have any adverse effects on marine fisheries or shellfish beds.
- Storm damage prevention and flood control: Storm damage prevention and flood control will benefit from the Project since it will protect the coastal bank. Sand compensation will be provided and shoreline monitoring will be conducted to ensure that adjacent and downdrift beaches are not impacted.
- Recreation: The Project will not adversely impact recreational uses along the beach or in the water, as it will be located on the coastal bank and a portion of the coastal beach. The Project will maintain public access in front of or on top of the geotextile tubes.
    - The Applicants proffer to take best efforts to improve the recreational use along Baxter Road by installing public seating in a viewing area.
    - The Applicants will continue to clean the beach of debris and trash as needed.
    - The Applicants (SBPF and TON) will work collaboratively to install one pet waste station in the Project area.
    - The TON will assign a beach access numbers to the access points.
    - The Applicants will engage an engineer to evaluate the feasibility of installing a safe and reasonably practical public access stairs or ramp down the Coastal Bank to the template in one or two locations in the Project area. This also includes the installation of seasonal (summer season) stairs from the template to the beach. The TON will own and maintain the stairs following construction.
    - The TON will regularly monitor the public water quality of the beach, if and following, public beach access is provided.

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Section 2.02 B(2) – Performance Standard

"No new bulkhead or coastal engineering structure shall be permitted to protect structures constructed, or substantially improved, after 8/78. Bulkheads may be rebuilt only if the Commission determines there is no environmentally better way to control an erosion problem, including in appropriate cases the moving of the threatened building. Other coastal engineering structures may be permitted only upon a clear showing that no other alternative exists to protect a structure built prior to 9/78, and not substantially improved, from imminent danger."

Project Compliance: Project compliance with this standard is discussed below.

- Protecting Pre-1978 Buildings: The Project is designed to protect the homes on the east side (seaward side) of Baxter Road, nearly all of which are pre-1978 buildings (see **Figure 7**). Many of the homes have been modified, but the modifications do not meet or exceed the substantial improvement provisions. See Section 2.4 and **Attachment E**.
- Alternatives: The Alternatives Analyses described in Section 5 demonstrates that although numerous alternatives have been considered and evaluated (or even implemented previously in the Project area), no suitable alternatives to the proposed Project exist which would satisfy the objective of providing protection for existing structures that pre-date September 1978 that have not been substantially improved, and that are in imminent and ongoing danger from the demonstrated erosion of the bank.

Section 2.02 B(4) - Performance Standard

"Clean fill of a compatible grain size may be used on a Coastal Beach, but not on a Tidal Flat, only if the Commission authorizes its use, and only if such fill is to be used for a beach or dune nourishment project. All possible mitigation measures shall be taken, as determined by the Commission, to limit the adverse effects of the fill."

Project Compliance: Project compliance with this standard is discussed below.

- Clean Fill: Sand compensation will consist of placing clean, beach- and bluff-compatible sand into the littoral system. See Section 4.6 for additional details.
- Tidal Flats: The Project does not involve placement of sand on any tidal flats.

Section 2.02 B(9) – Performance Standard

"The Commission may impose such additional requirements as are necessary to protect the Interests Protected by the Bylaw."

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Project Compliance: The Project has been designed using best available measures to stabilize the Coastal Bank and protect existing landward structures and public infrastructure while simultaneously avoiding, minimizing, and mitigating for potential impacts. All of the interests protected by the Bylaw have been considered during the process of Project design. No additional requirements are necessary.

7.3.2 Nantucket Coastal Dunes (Section 2.03)

Performance Standards for coastal dunes are set forth in Section 2.03 B of the Bylaw regulations, which provides that "[a] Coastal dune, coastal dune field, or land within 100 Feet of a coastal dune or coastal dune field, shall be presumed significant to the Interests Protected by the Bylaw as referenced in Section A, therefore the following regulations shall apply:"

The Project does not include structures or activities subject to the performance standards listed below, and hence they are excluded from the following discussion:

- Section 2.03 B(5) (septic leach facility);
- Section 2.03 B(7) (buildings);
- Section 2.03 B(8) (elevated walkways); and
- Section 2.03 B(9) (fertilizers).

The remaining applicable sections of the local wetlands regulations pertaining to coastal dunes are addressed below.

Section 2.03 B(1) – Performance Standard

"No coastal revetments or coastal engineering structures of any type shall be constructed, rebuilt, or repaired."

Project Compliance: The proposed CES is designed to avoid alteration of the Coastal Dune and is not located on or in front of the Coastal Dune. See the Project Plans in **Attachment I.** The proposed sacrificial dune is not a CES.

Section 2.03 B(2) – Performance Standard

"All projects which are not water dependent shall maintain at least a 25-foot natural undisturbed area adjacent to a coastal dune. All structures which are not water dependent shall be at least 50 feet from a coastal dune."

Project Compliance: This standard does not apply because the proposed Project is water dependent.

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Water-dependent uses area defined in 310 CMR 10.04, which reads:

"Water-dependent Uses mean those uses and facilities which require direct access to, or location in, marine, tidal or inland waters and which therefore cannot be located away from said waters, including but not limited to: marinas, public recreational uses, navigational and commercial fishing and boating facilities, water-based recreational uses, navigation aids, basins, and channels, industrial uses dependent upon waterborne transportation or requiring large volumes of cooling or process water which cannot reasonably be located or operated at an upland site, crossings over or under water bodies or waterways (but limited to railroad and public roadway bridges, tunnels, culverts, as well as railroad tracks and public roadways connecting thereto which are generally perpendicular to the water body or waterway), and any other uses and facilities as may further hereafter be defined as water-dependent in 310 CMR 9.00: Waterways."

The Waterways Regulations define the various water-dependent uses in 310 CMR 9.12 and those include among use the following:

"beach nourishment;" [310 CMR 9.12(2)(a)7.] and

"shore protection structures, such as seawalls, bulkheads, revetments, dikes, breakwaters, and any associated fill which are necessary either to protect an existing structure from natural erosion or accretion, or to protect, construct, or expand a water-dependent use" [310 CMR 9.12(2)(a)11.]

Because the shoreline protection measures proposed herein: (a) require direct access to the shoreline, (b) involve the installation of shore protection measures to protect the bluff from natural erosion, and (c) provide indirect beach nourishment from the templates and sacrificial dune, this Project is a water-dependent use.

Section 2.03 B(3) – Performance Standard

"No excavation or disturbance of vegetative cover shall be allowed on a coastal dune unless the area is completely restored, replanted, and stabilized to its original form and volume."

Project Compliance: The Project does not involve the excavation or disturbance of vegetative cover on a Coastal Dune. The sacrificial dune will be established seaward of the natural dune, and sand placement will be conducted to avoid covering existing vegetation with sand.

Section 2.03 B(4) – Performance Standard

"Fill may be used only if the Commission authorizes its use and only if such fill is to be used for beach and dune nourishment projects."

Project Compliance: "Fill" is defined in the Nantucket Bylaw Regulations as:

"Fill - to deposit any material so as to change any grades or raise an elevation, either temporarily or permanently."

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In terms of material, fill, is not defined. The sand material to be placed for this project is needed to stabilize the Sconset Bluff. The sacrificial dune is proposed to protect the natural dune, and sand off the sacrificial dune will indirectly nourish the natural dune. Likewise, sand off the templates and sacrificial dune will indirectly nourish the fronting beach. Therefore this project complies with this standard. The sand used on the templates and for the sacrificial dune will be compatible with bluff and beach sediment as described in the procedures presented in Section 4.6.

Section 2.03 B(6) – Performance Standard

"Any activity allowed on a coastal dune or within 100 feet of a dune shall be restricted to such activity that is determined by the Commission not to have any adverse effect on the dune by altering the ability of wind or waves to remove sand from or deposit sand on a dune; by disturbing vegetative cover in a manner sufficient to destabilize the dune; by causing any modification of the dune form and slope which would increase the potential for erosion, storm or flood damage; by interfering with landward or lateral movement of the dune; or by causing the rate of sand removal to increase through man-made means or structures."

The underlined sections of this standard are discussed individually below.

Project Compliance: Work within 100 feet of the Coastal Dune involves installation of the sand covered coir terrace north of the dune during Phase 1, and installation of the geotube system to the north and a sacrificial dune seaward of the natural dune during Phase 2.

Altering the ability of waves to remove sand from or deposit sand on a dune

The sand covered coir terrace and geotube system located to the north of the natural dune will not interfere with wave action or the removal of sand from the dune by waves or the deposition of sand by wave action. The proposed sacrificial dune, installed seaward of the natural dune, is proposed to intercept wave action before it interacts with the natural dune. Sand will be removed from the sacrificial dune first, and once it is lost (or "sacrificed") waves will interact with the natural dune and remove sand from the natural dune and allow for deposition of sand onto the dune.

Disturbing the vegetative cover in a manner to destabilize the dune

The sand covered coir terrace and geotube system located to the north of the natural dune will not disturb vegetation on the narrow, natural dune. The proposed sacrificial dune, installed seaward of the natural dune, is designed and will be installed to avoid covering vegetation on the natural dune.

Causing any modification of the dune form and slope which would increase the potential for erosion, storm or flood damage

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No modification of the dune–form or slope is proposed or will occur from the sand covered coir terrace or geotubes. The sacrificial dune is proposed to augment sand volume of the fronting dune to increase its capacity to protect the Coastal Bank from storm and flood damage.

Interfering with the landward or lateral movement of the dune

The existing Coastal Bank prevents landward movement of the dune. The Project will not change this situation. Since the 1970's the Coastal Dune along Sconset Bluff has been lost, with loss progressing from north to south. The proposed Project only will involve installing the sand covered coir terrace after the narrow Coastal Dune has been permanently lost. Permanent loss is defined as the natural dune being observed to be lost (eroded) during three consecutive annual inspections conducted in the late summer / early autumn.

Causing the rate of sand removal to increase through man-made means or structures

No sand will be removed from the natural dune. The proposed Project is expected to add sand to the dune by: (1) indirectly depositing sand off the sand covered coir terrace of geotube template by wind or wave action, and (2) directly from sacrificial sand being placed seaward of the natural dune.

Section 2.03 B(10) – Performance Standard

"Vehicular access for existing homes or recreational use shall be as unpaved ways and shall be done in accordance with such procedures as the Commission determines will minimize any adverse effect on the dune and the Interests of the Bylaw."

Project Compliance: The dune, where it exists, is a narrow dune at the toe of the Coastal Bank. There is no vehicular access across or through the dune presently, and no changes will be made relative to vehicular access as a result of this Project.

Section 2.03 B(11) – Performance Standard

"The Commission may impose such additional requirements as are necessary to protect the Interests Protected by the Bylaw."

Project Compliance: SBPF and TON do not believe that additional requirements beyond those proposed in this NOI are necessary to protect the interests of the Bylaw. The Project will comply with any additional reasonable requirements established by the Commission.

7.3.3 Nantucket Coastal Banks (Section 2.05)

Performance Standards for work on coastal banks are set forth in Section 2.05 B of the local wetlands regulations, which provides that *"Coastal Banks or Land within 100 feet of a Coastal Bank shall be presumed significant to the Interests Protected by the Bylaw as referenced in Section A, therefore the following regulations shall apply."*

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The Project does not include structures subject to the performance standards listed below, and hence they are excluded from the following discussion:

- Section 2.05 B(2) (piers);
- Section 2.05 B(4) (elevated walkways);
- Section 2.05 B(6) (septic leach facility); and
- Section 2.05 B(8) (buildings).

The remaining applicable sections of the local wetlands regulations pertaining to coastal bank are addressed below.

Section 2.05 B(1) – Performance Standard

"No new bulkheads, coastal geotextile tubes, groins, or other coastal engineering structures shall be permitted to protect structures constructed, or substantially improved, after 8/78 except for public infrastructures**.** Bulkheads and groins may be rebuilt only if the Commission determines there is no environmentally better way to control an erosion problem, including in appropriate cases the moving of the threatened buildings and/or public infrastructure. 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."

Project Compliance: The Project objectives are to protect Baxter Road and other public infrastructure and to preserve pre-78 homes on the east side of Baxter Road. The pre-78 status of the structures is established in Section 2.4 above and shown in **Figure 7**. As is explained in Section 5 above, no other alternatives exist to protect these pre-78 structures (which have not been "substantially improved"). We note that nearly all of these houses have already been moved, others have little room to move, and that the Town has recognized that infrastructure is in imminent danger and should be protected in place.

Bank recession is progressing from north to south and many homes have been forced to move off their lots or have been lost to erosion. An analysis of bank retreat prepared for the pilot project documented that single-season bank recession rates could be as high as 40-feet, based on measured bank recession from 2012-2013. The homes and infrastructure in the Project area are all in imminent danger because they could be destroyed if another season or two of significant bank erosion occurs.

The Project does not involve rebuilding any bulkhead or groin.

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Section 2.05 B(3) - Performance Standard

"All projects shall be restricted to activity determined by the Commission to have no adverse effect on bank height, bank stability, wildlife habitat, vegetation, wetland scenic view, or the use of a bank as a sediment source."

Project Compliance: The Project will not have any adverse effect on bank height, bank stability, wildlife habitat, vegetation, wetland scenic view, or the use of a bank as a sediment source as described below.

- Bank height: The Project will preserve rather than adversely affect bank height, as it does not involve any work which would lower the bank height.
- Bank stability: As designed, the Project is intended to maintain bank stability by protecting the lower bank from wave-induced erosion. Vegetation plantings on the upper bank face will also prevent rain- and wind-induced erosion.
- Wildlife habitat: The Project will not adversely impact wildlife habitat for the reasons described in Sections 3.3 and 4.9.
- Vegetation: Bank vegetation will be restored as described in Section 4.9. Planting beach grass and other native vegetation on the bank face will enhance vegetation in the Project area.
- Wetland scenic view: As shown in **Figure 5**, the geotextile tubes with the sand cover and associated vegetation will have wetland scenic views similar to bank appearance before it was denuded by erosion.
- Sediment Source: With respect to the bank as a sediment source, the Project is designed to stabilize the existing bank in accordance with local performance standard Section 2.05 B(1) and state performance standard 310 CMR 10.30(3). The Project also provides sand compensation and includes monitoring of adjacent and downdrift beaches. Section 4.6 describes the manner in which compensatory sand will be selected and tested to ensure its compatible with existing beach and bluff sediment.

Section 2.05 B(5) - Performance Standard

"All projects which are not water dependent shall maintain at least a 25-foot natural undisturbed area adjacent to a coastal bank. All structures which are not water dependent shall be at least 50 feet from a coastal bank."

Project Compliance: This standard does not apply to the Project because the Project is water dependent.

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"Water Dependent Projects or Uses" are defined in the local wetlands regulations as:

"…projects which require direct access for their intended use and therefore cannot be located out of the Area Subject to Protection under the Bylaw. Examples include but are not limited to: docks, piers, boat landings, boathouses, marinas, stairs to beaches, and boardwalks over wetland vegetation. Projects which benefit from wetlands access but which do not require it are not water dependent uses. Examples include: restaurants, dwellings, and commercial enterprises servicing marine-related uses such as fish markets, repair facilities, ships' chandleries, and general use recreational trails."

The Project is water dependent because direct access to the Coastal Bank and Coastal Beach is required to achieve the intended purpose of the Project in stabilizing the Coastal Bank to provide storm damage prevention and flood control. This Project cannot be located out of the Coastal Bank and Coastal Beach resource areas. The Project will also include preserving and enhancing recreational trails and beach access. See also response the Coastal Dune performance standard 2.03(B)(1) above.

Section 2.05 B(7) - Performance Standard

"In areas of an eroding coastal bank, the distance from all new structures to the coastal bank shall be at least 20 times the average annual erosion rate or 100 feet, whichever is the lesser. The average annual erosion rate shall be determined by averaging the annual erosion over a 150-year period ending with the date the NOI was filed, or if no NOI was filed, the date construction began. If erosion data is not available for the 150 year period, the Commission shall determine the average annual erosion rate from such lesser time for which erosion data is available. In cases where documentation can be provided to show that the use of the I50-year period is inappropriate to existing coastal shoreline characteristics and trends, alternate shoreline change rates may be used with the approval of the Commission."

Project Compliance: This regulation is designed to ensure a substantial setback for new structures built on the land above an eroding coastal bank. The Project does not involve construction of any new buildings or other structures at the top of the coastal bank that might require future protection; therefore, this standard does not apply.

7.3.4 Nantucket Land Subject to Coastal Storm Flowage (Section 2.10)

Performance Standards for Land Subject to Coastal Storm Flowage (LSCSF) are defined in Section 2.10 of the local wetlands regulations, which provides that "*Land Subject to Coastal Storm Flowage or Land within 100 feet of Land Subject to Coastal Storm Flowage shall be presumed significant to the interests Protected by the Bylaw, as referenced in Section A, therefore the following regulations shall apply:"*

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The Project does not include activities or structures subject to the following performance standards, and hence they are excluded from the subsequent discussion:

- Section 2.10 B(2) (use of pollutants or septic systems);
- Section 2.10 B(3) (underground fuel tanks); and
- Section 2.10 B(4) (new buildings).

The applicable Sections 2.10 B(1) and 2.10 B(5) are discussed below.

Section 2.10 B(1) – Performance Standard

"The work shall not reduce the ability of the land to absorb and contain flood waters, or to buffer inland areas from flooding and wave damage."

Project Compliance: The Project will not reduce the ability of LSCSF to absorb and contain flood waters. By stabilizing the bank face and providing protection at the toe of bank, the Project will enhance the coastal bank's function of buffering inland areas and buildings from storm damage.

Section 2.10 B(5)

"The Commission may impose such additional requirements as are necessary to protect the Interests Protected by the Bylaw."

Project Compliance: The Project has been designed using best available measures to stabilize the coastal bank and protect existing landward structures while simultaneously avoiding, minimizing, and mitigating for potential impacts. All of the interests protected by the Bylaw have been considered during the process of Project design. SBPF and TON do not believe that any additional requirements are necessary to protect the Bylaw's interests.

8.0 Conclusion

The Baxter Road and Sconset Bluff Stabilization and Coastal Resiliency Project presented herein includes a suite of toe protection measures including: geotubes (a CES), coir terrace (a non-CES measure), and sacrificial dune (a nature-based measure) based on the existing slope conditions and sand availability, with defined tipping point triggers to transition from one measure to the next, i.e., to transition from dune nourishment to coir terraces, and coir terraces to geotubes.

This NOI demonstrates that:

a. The Sconset Bluff is experiencing erosion thus there is a need to stabilize the Coastal Bank for the mid-term while a long-term plan is developed;

b. The Baxter Road and Sconset Bluff Stabilization and Coastal Resiliency Project meets all applicable performance standards in the state and local Regulations;

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c. The pilot project has not damaged adjacent properties; and

d. The compensatory sand program for the pilot project contributes sand to littoral system commensurate with or in excess of the documented bluff sediment contribution which maintains adjacent Coastal Beaches consistent with the portions of the nearby natural unprotected bluff.

This NOI is informed by the Long-Term Planning Memo and eight years of Pilot Project monitoring. The Long-Term Planning Memo included an assessment of alternatives for technically feasible solutions to address bluff and toe erosion in the Project area. The authors identified action for the short- medium- and long-term time horizons. Although the long-term action was identified as retreat, the identified mid-term actions include installation of interim bluff stabilization measures to protect Baxter Road and existing homes from erosion, plus monitoring.

For this toe protection project a standalone alternatives assessment of options were evaluated in practice and theory and is presented above in Section 5. That assessment concludes that the suite of measures proposed herein are the pragmatic measures to protect the Coastal Bank from further erosion for the short- and mid-term planning horizons. Implementing this Project supports the Coastal Bank's capacity to protect the WPA interests and Bylaw values of storm damage prevention and flood control.

For the pilot project, the Commission and MassDEP had to make a permitting decision based on science and engineering design parameters. With eight storm seasons worth of observations and data, the Commission can observe there have been no adverse effects to neighboring properties or adjacent Coastal Beaches, and the Commission therefore can make a permitting decision for this extension project based on science, engineering design parameters, and direct observation —all of which support the issuance of an Order of Conditions allowing the continuation of the existing geotube array and the expanded Project requested by filing this NOI.

The TON and SBPF recognize that the proposed Project is, in some respects, complex. At its core, however, the Commission's evaluation of the Project can be distilled into a handful of key questions:

1. Is the Project area eligible for a coastal engineering structure given the need to protect existing pre-1978 homes and public infrastructure from imminent harm?
2. Are geotubes the right type of protection, given the history of the pilot project and the extensive alternatives analysis demonstrating that geotubes are effective, have not caused any harm, and are the best available measure?
3. Is the amount of compensatory sand being proposed appropriate, given that it is several times the average amount of sand contributed by the bluff on an annual basis over the past 28 years?

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4. Are the proposed measures to assure the Project's future compliance with an Order of Conditions adequate given the specific failure criteria proposed to be included in the order of conditions and the Commission's established right to order removal if necessary?

This document establishes that the answer to each of these questions is "yes." The TON and SBPF suggest that organizing the Commission's review of this NOI around these four questions may assist the Commission in conducting its review.

For all of the reasons discussed throughout this document, we respectfully request that the Nantucket Conservation Commission issue an Order of Conditions allowing the proposed Sconset Bluff Stabilization and Coastal Resiliency Project to be built, and that includes a Special Condition outlining the administrative procedures which will allow the Applicants to transition from one toe protection measure to the next within the auspices of the issued OOC.

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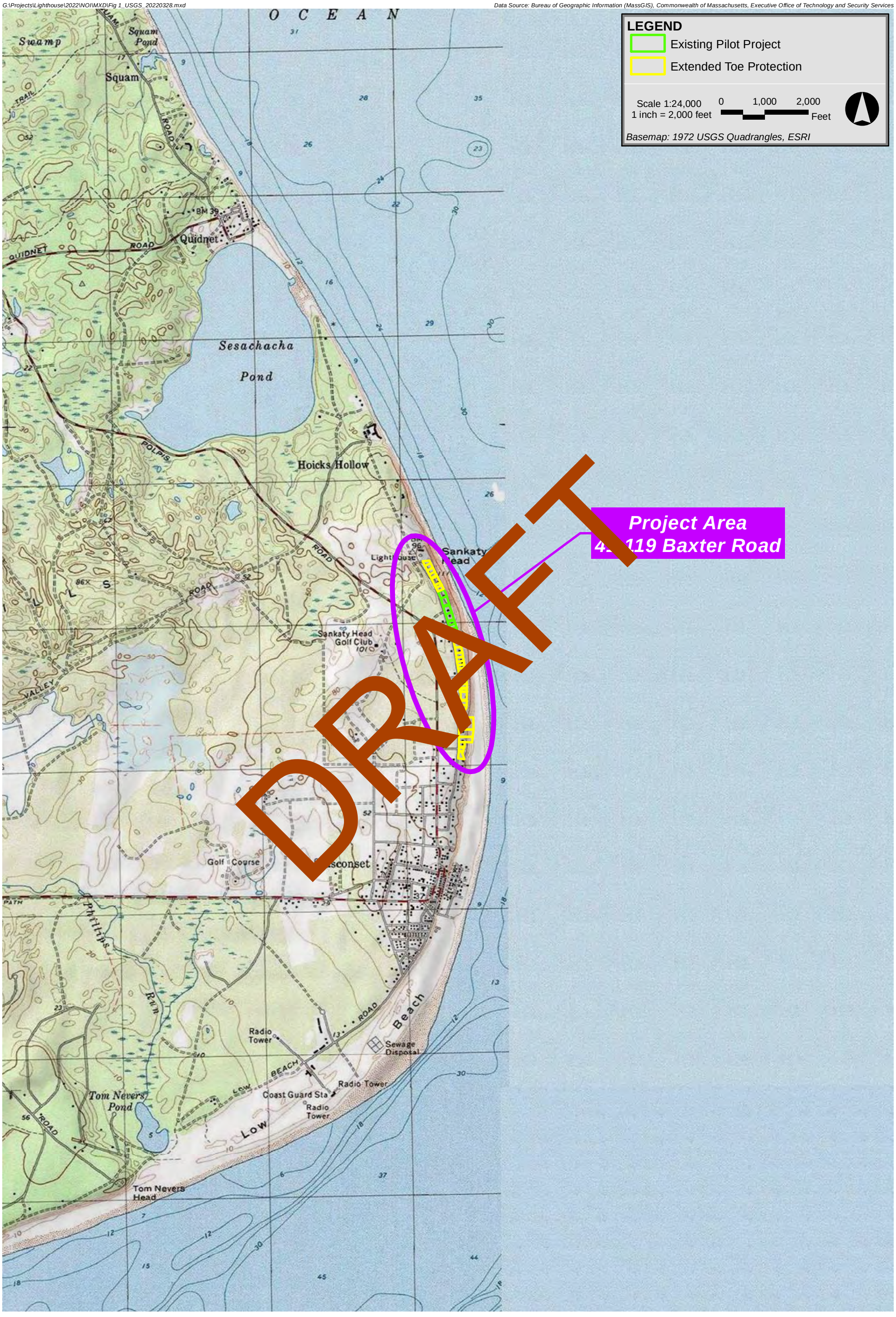
Attachment B

Figures and Photos

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G:\Projects\Lighthouse\2022\NOI\MXD\Fig 1_USGS_20220328.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Baxter Road & Sconset Bluff Stabilization and Coastal Resiliency Project **Nantucket, MA**

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Figure 1

USGS Locus Map

G:\Projects\Lighthouse\2022\NOI\MXD\Fig 2_Aerial_20220328.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



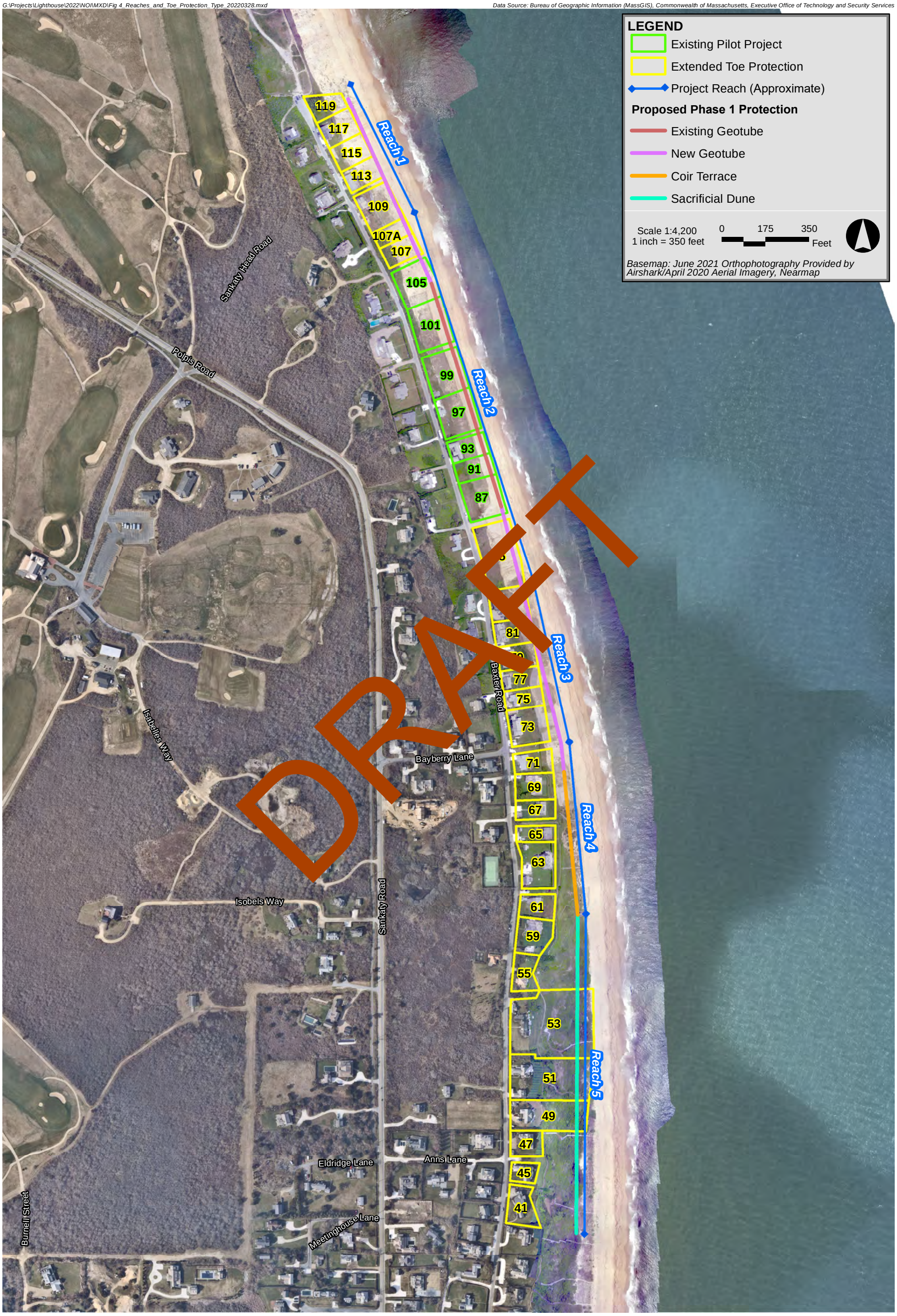
Baxter Road & Sconset Bluff Stabilization and Coastal Resiliency Project Nantucket, MA

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Figure 2
Aerial Locus Map

G:\Projects\Lighthouse\2022\NOI\MXD\Fig 4_Reaches_and_Toe_Protection_Type_20220328.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

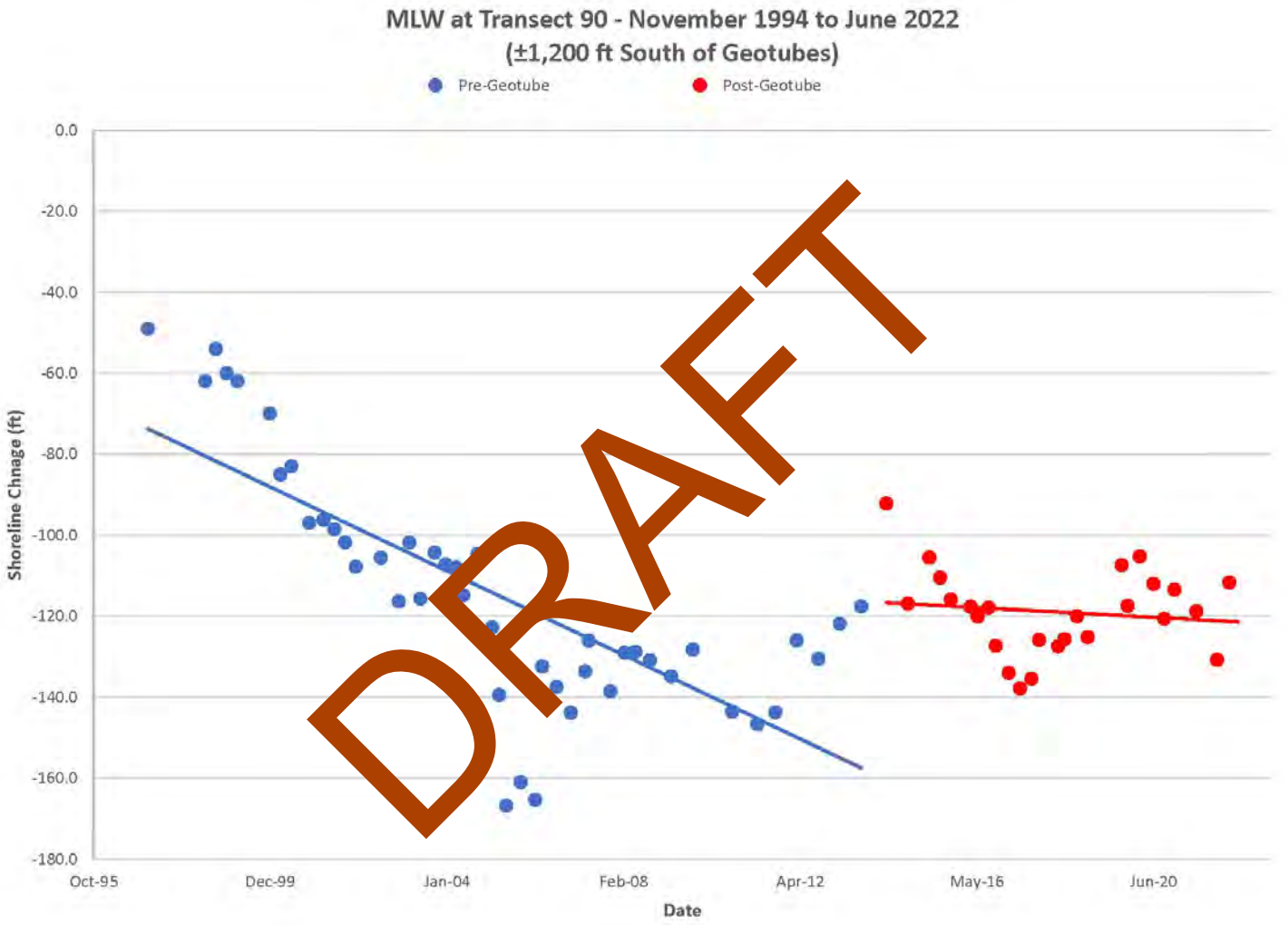


Baxter Road & Sconset Bluff Stabilization and Coastal Resiliency Project **Nantucket, MA**

Epsilon Associates Inc.

Figure 3

Reaches and Toe Protection Types

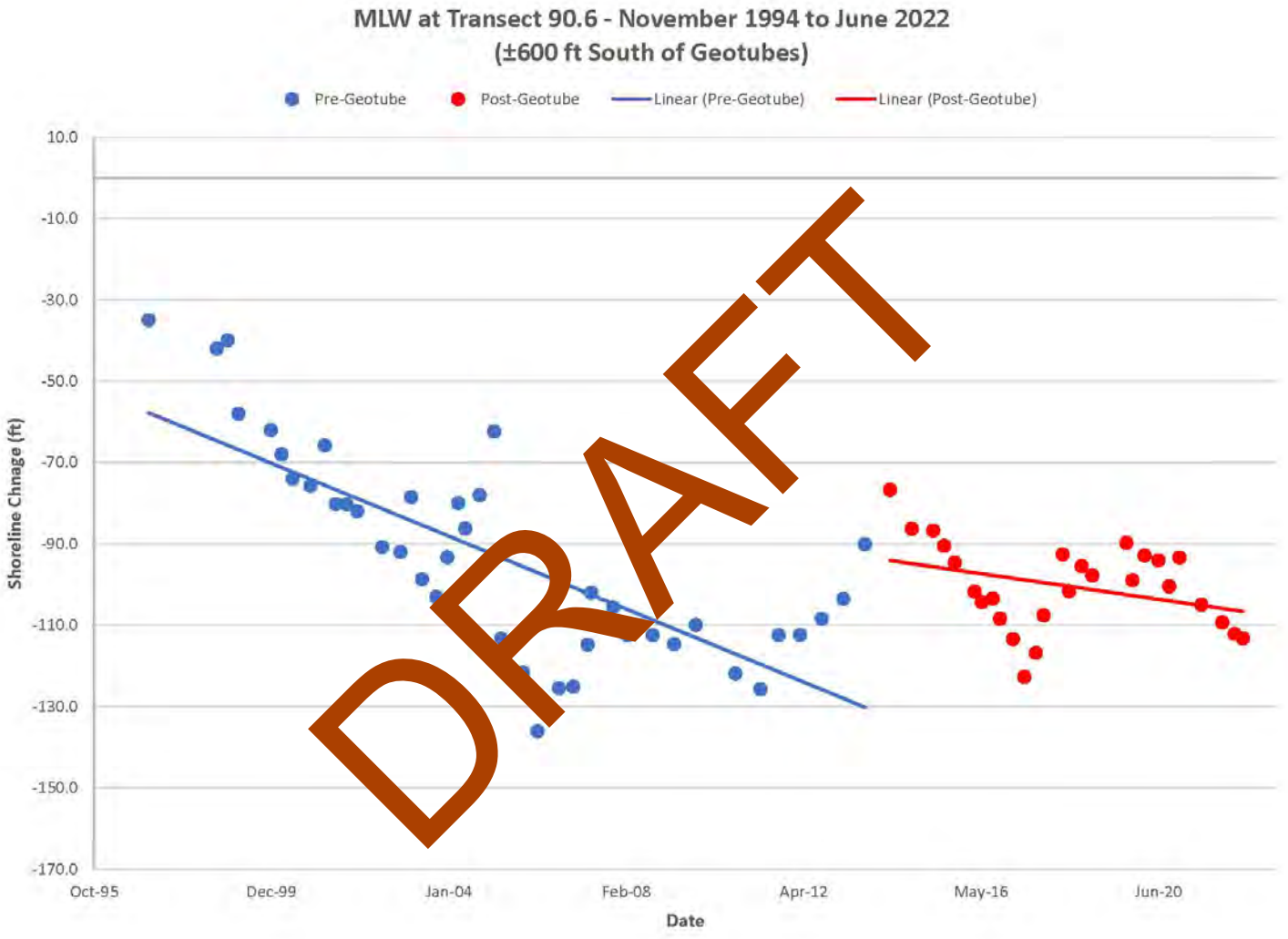


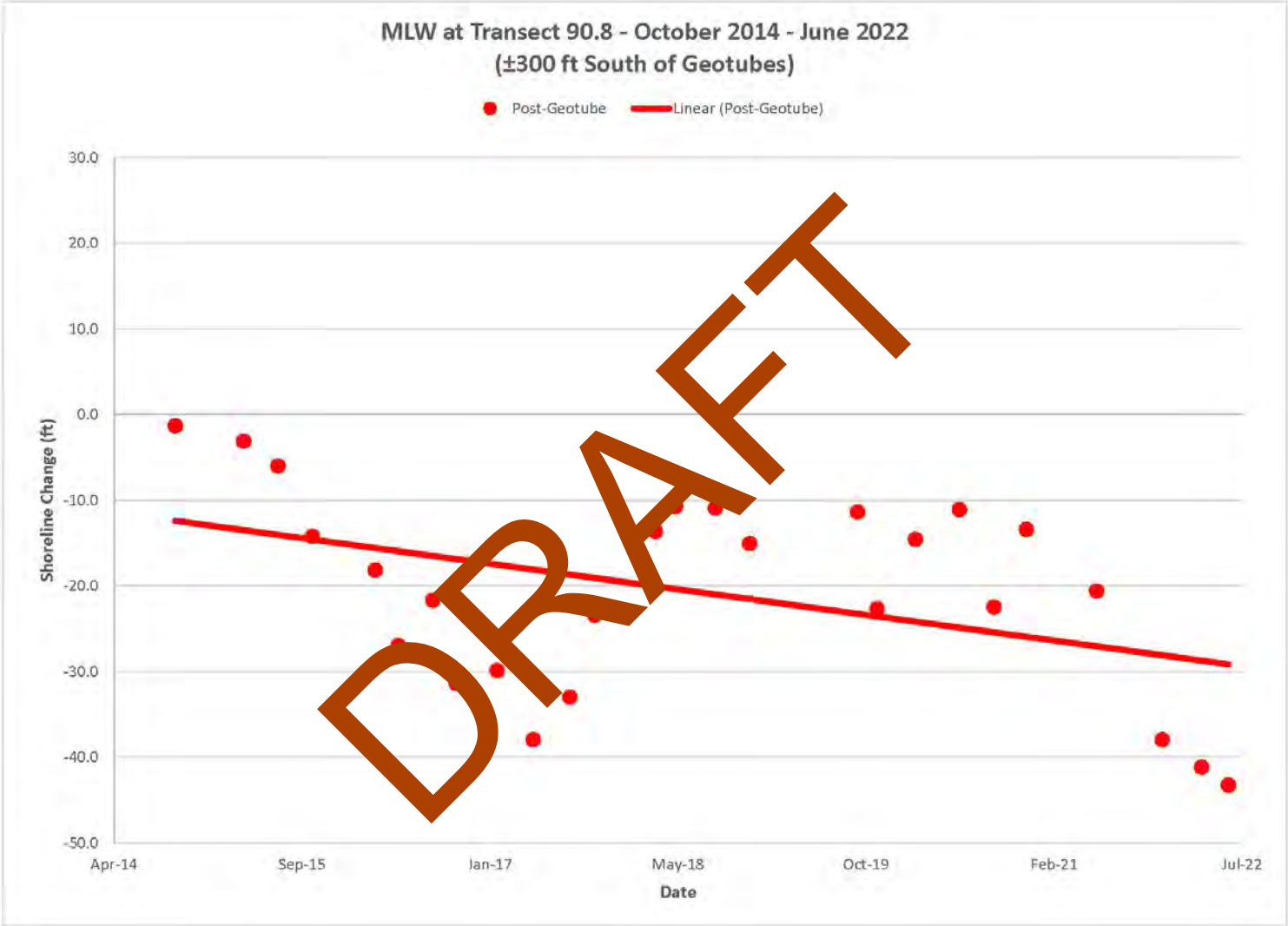
Baxter Road & Sconset Bluff Stabilization and Coastal Resiliency Project Nantucket, MA

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Figure 4, Sheet 1 of 16

MLW at Transect 90 – November 1994 to June 2022


MLW at Transect 90.6 - November 1994 to June 2022
(±600 ft South of Geotubes)
Pre-Geotube
Post-Geotube
Linear (Pre-Geotube)
Linear (Post-Geotube)
10.0
-10.0
-30.0
-50.0
-70.0
-90.0
-110.0
-130.0
-150.0
-170.0
Shoreline Chnage (ft)
Oct-95
Dec-99
Jan-04
Feb-08
Apr-12
May-16
Jun-20
Date
DRAFT

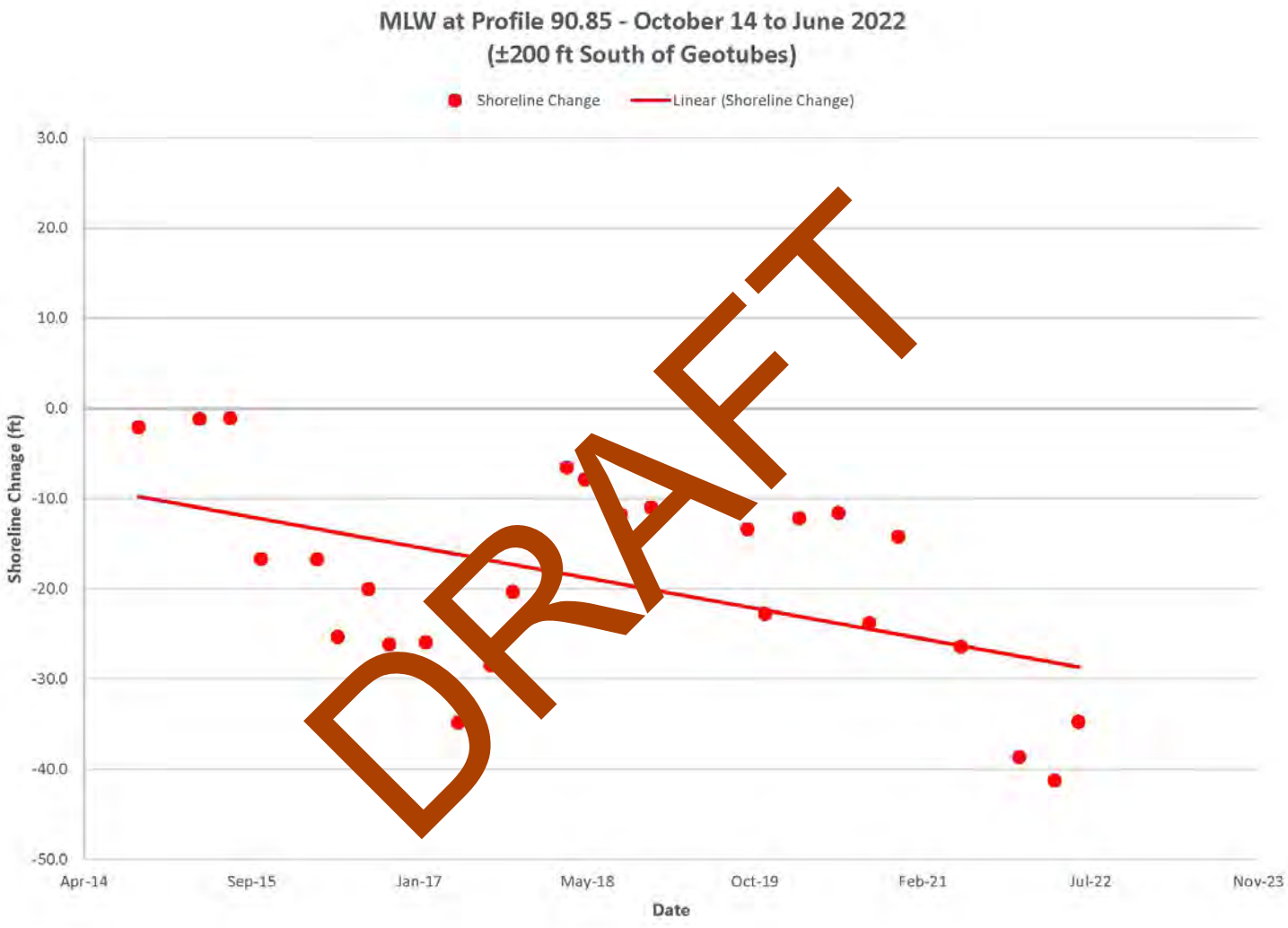


Baxter Road & Sconset Bluff Stabilization and Coastal Resiliency Project Nantucket, MA

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Figure 4, Sheet 3 of 16

MLW at Profile 90.8 – October 2014 to June 2022

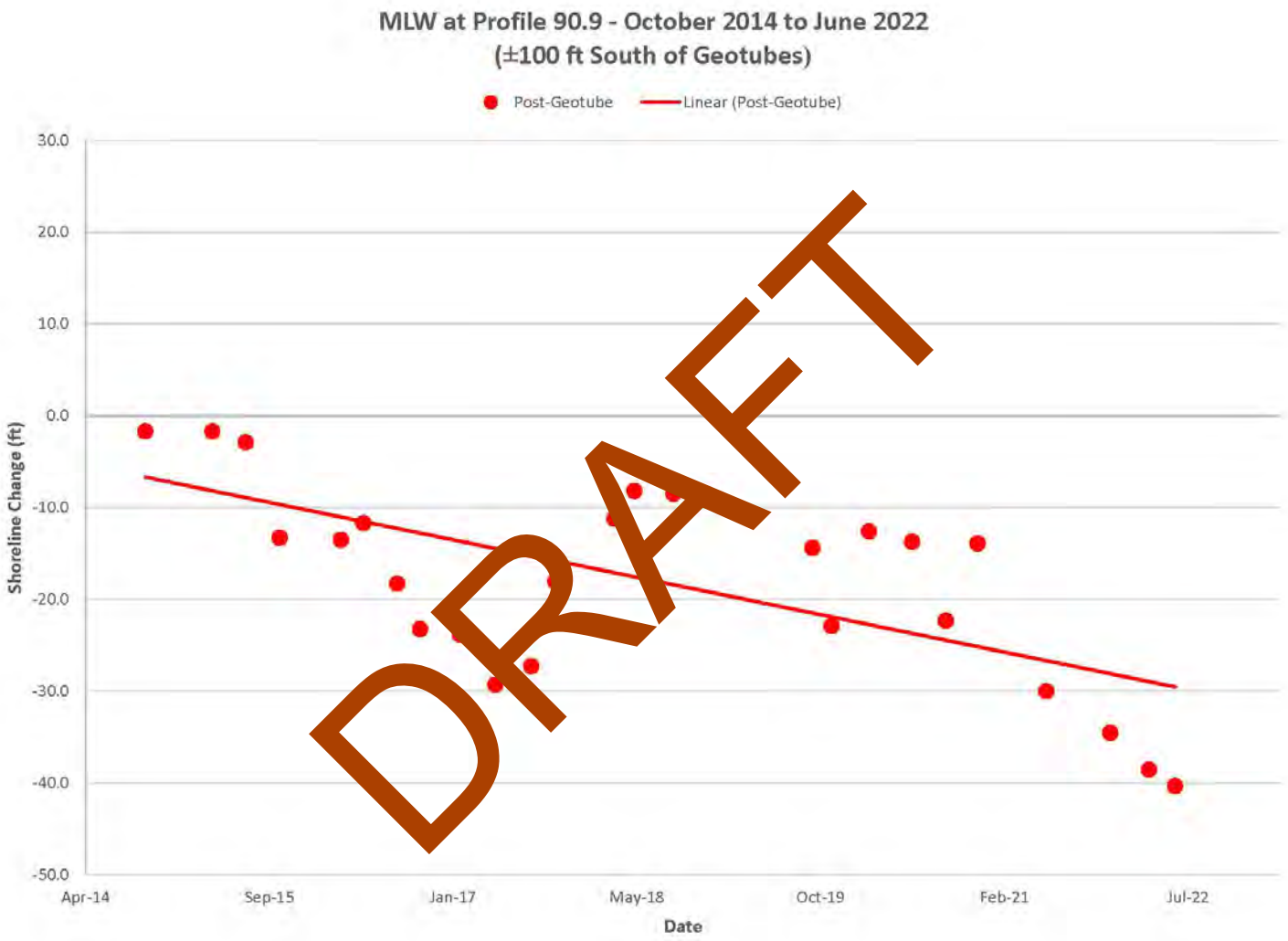


Baxter Road & Sconset Bluff Stabilization and Coastal Resiliency Project Nantucket, MA

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Figure 4, Sheet 4 of 16

MLW at Profile 90.85 – October 2014 to June 2022

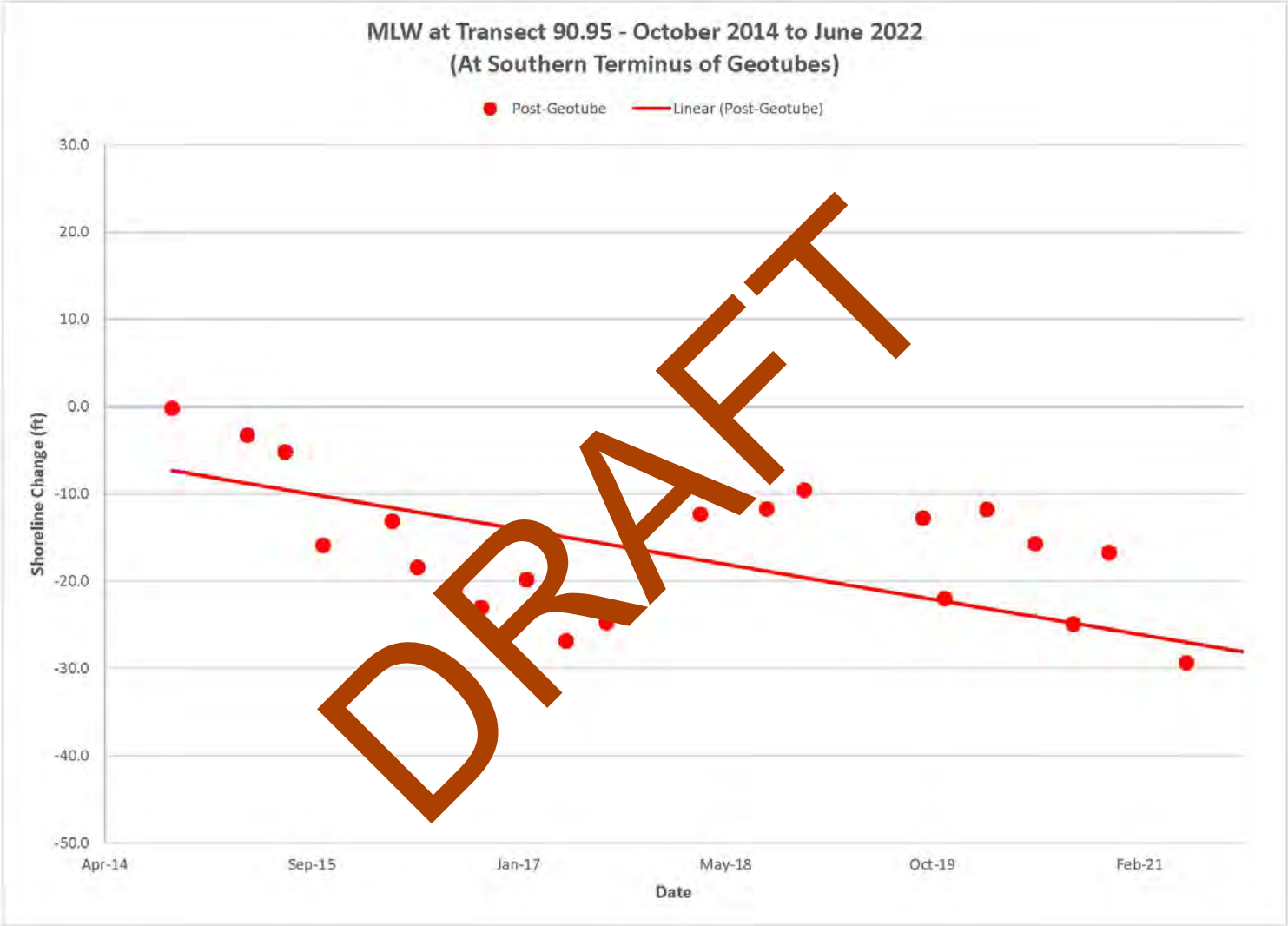


Baxter Road & Sconset Bluff Stabilization and Coastal Resiliency Project Nantucket, MA

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Figure 4, Sheet 5 of 16

MLW at Transect 90.9 – October 2014 to June 2022

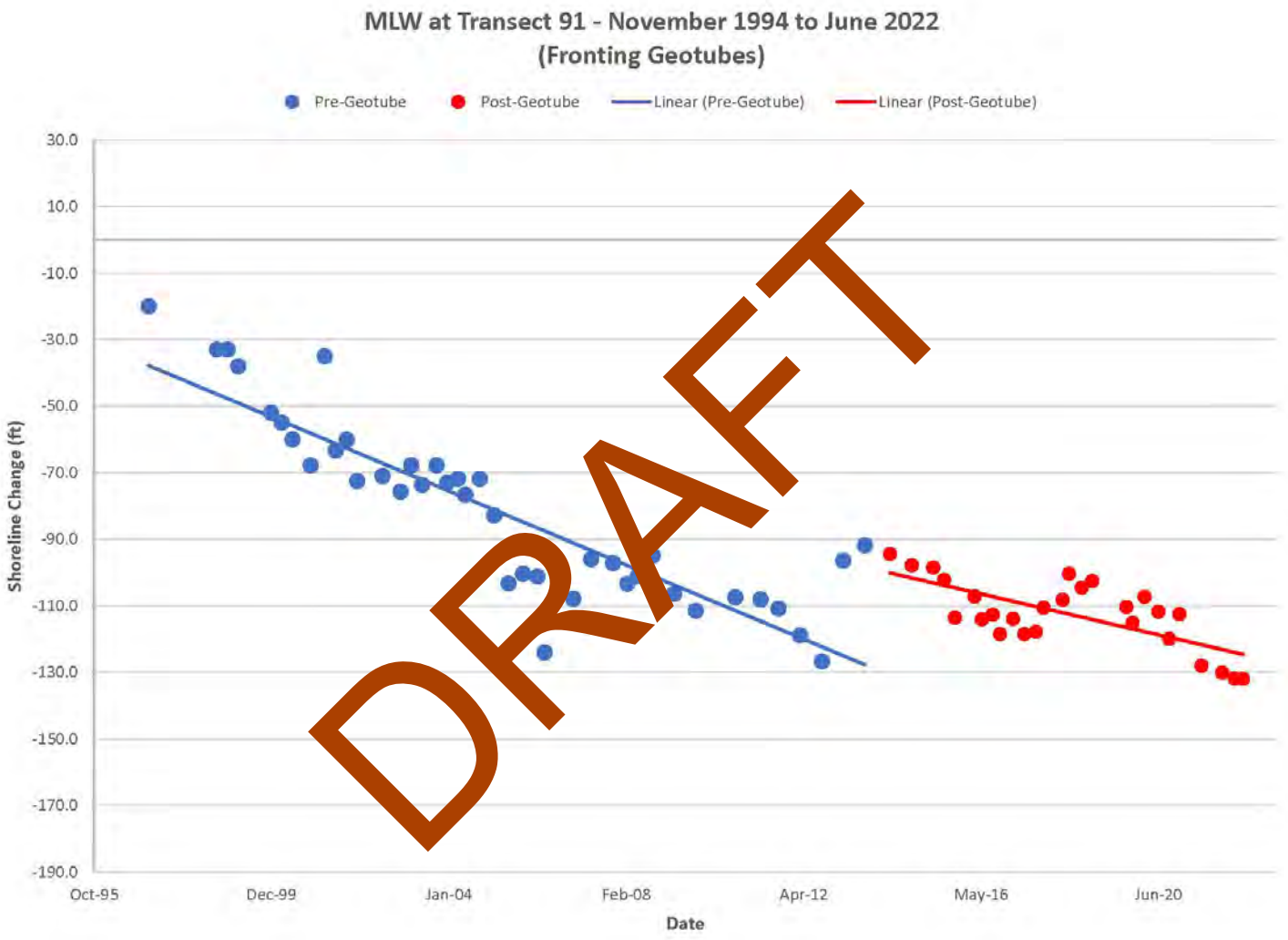


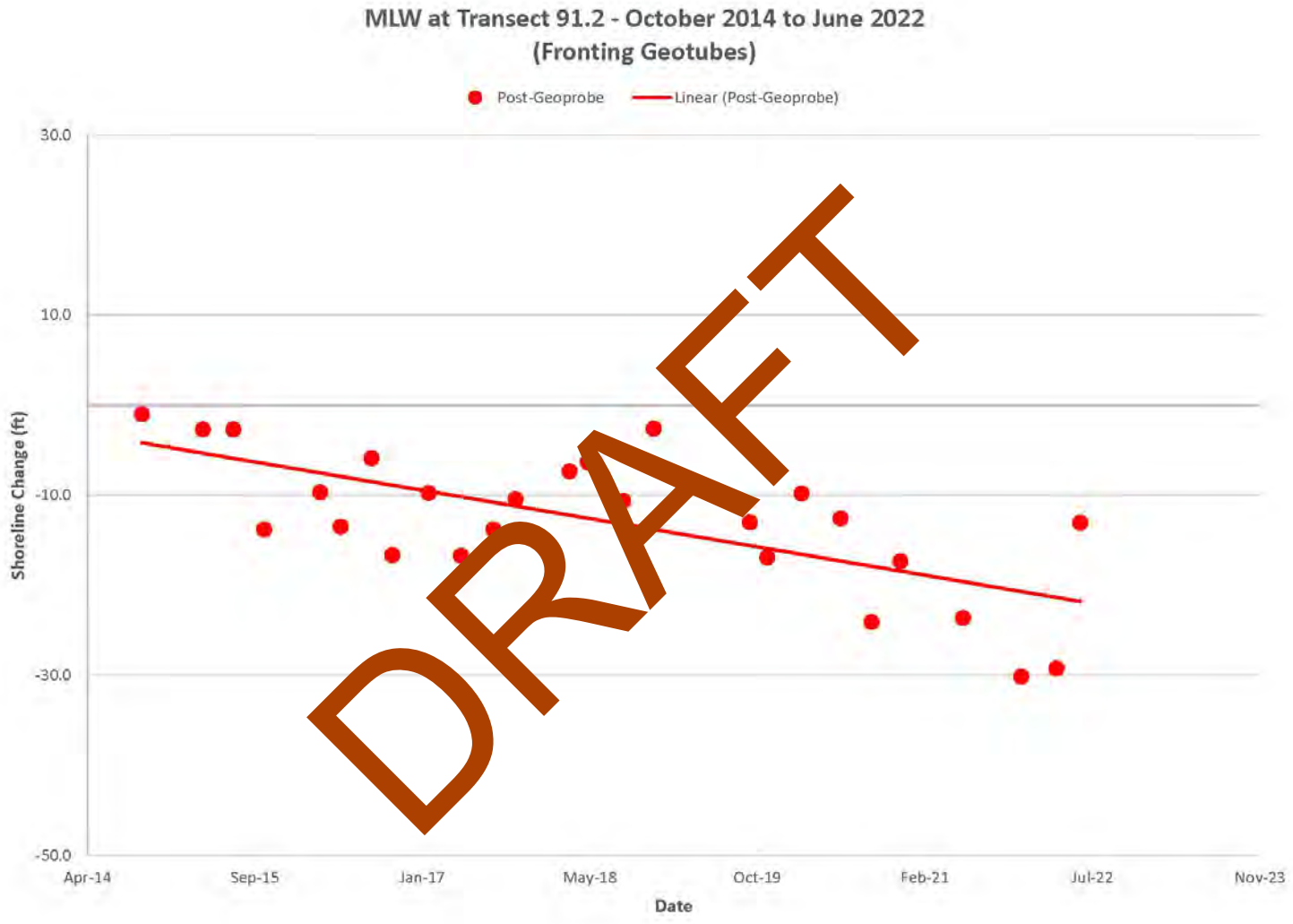
Baxter Road & Sconset Bluff Stabilization and Coastal Resiliency Project Nantucket, MA

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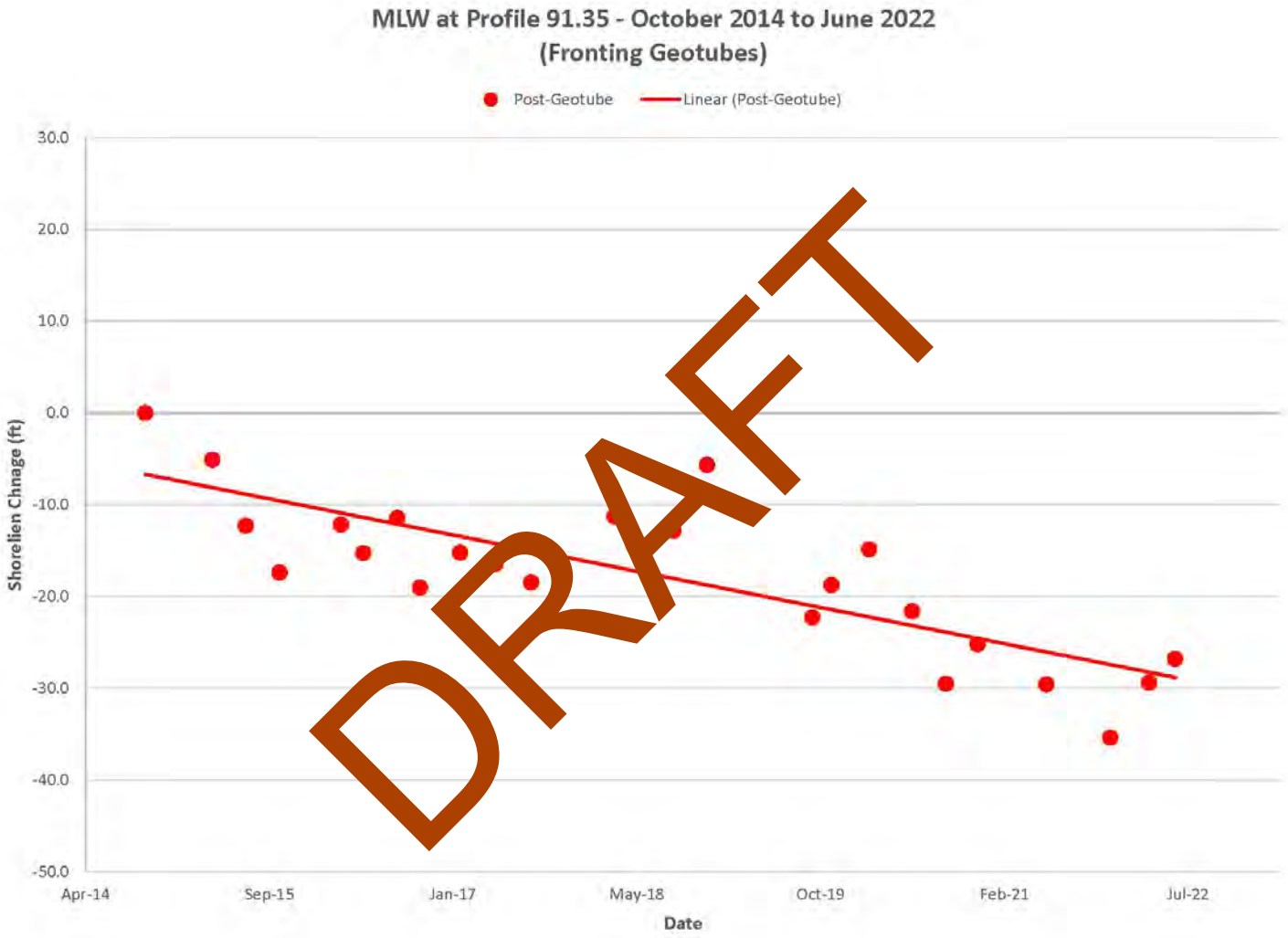
Figure 4, Sheet 6 of 16

MLW at Transect 90.95 – November 1994 to June 2022


MLW at Transect 91 - November 1994 to June 2022
(Fronting Geotubes)
Pre-Geotube
Post-Geotube
Linear (Pre-Geotube)
Linear (Post-Geotube)
30.0
10.0
-10.0
-30.0
-50.0
-70.0
-90.0
-110.0
-130.0
-150.0
-170.0
-190.0
Shoreline Change (ft)
Oct-95
Dec-99
Jan-04
Feb-08
Apr-12
May-16
Jun-20
Date
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MLW at Transect 91.2 - October 2014 to June 2022
(Fronting Geotubes)
Post-Geoprobe
Linear (Post-Geoprobe)
30.0
10.0
-10.0
-30.0
-50.0
Shoreline Change (ft)
Apr-14
Sep-15
Jan-17
May-18
Oct-19
Feb-21
Jul-22
Nov-23
Date

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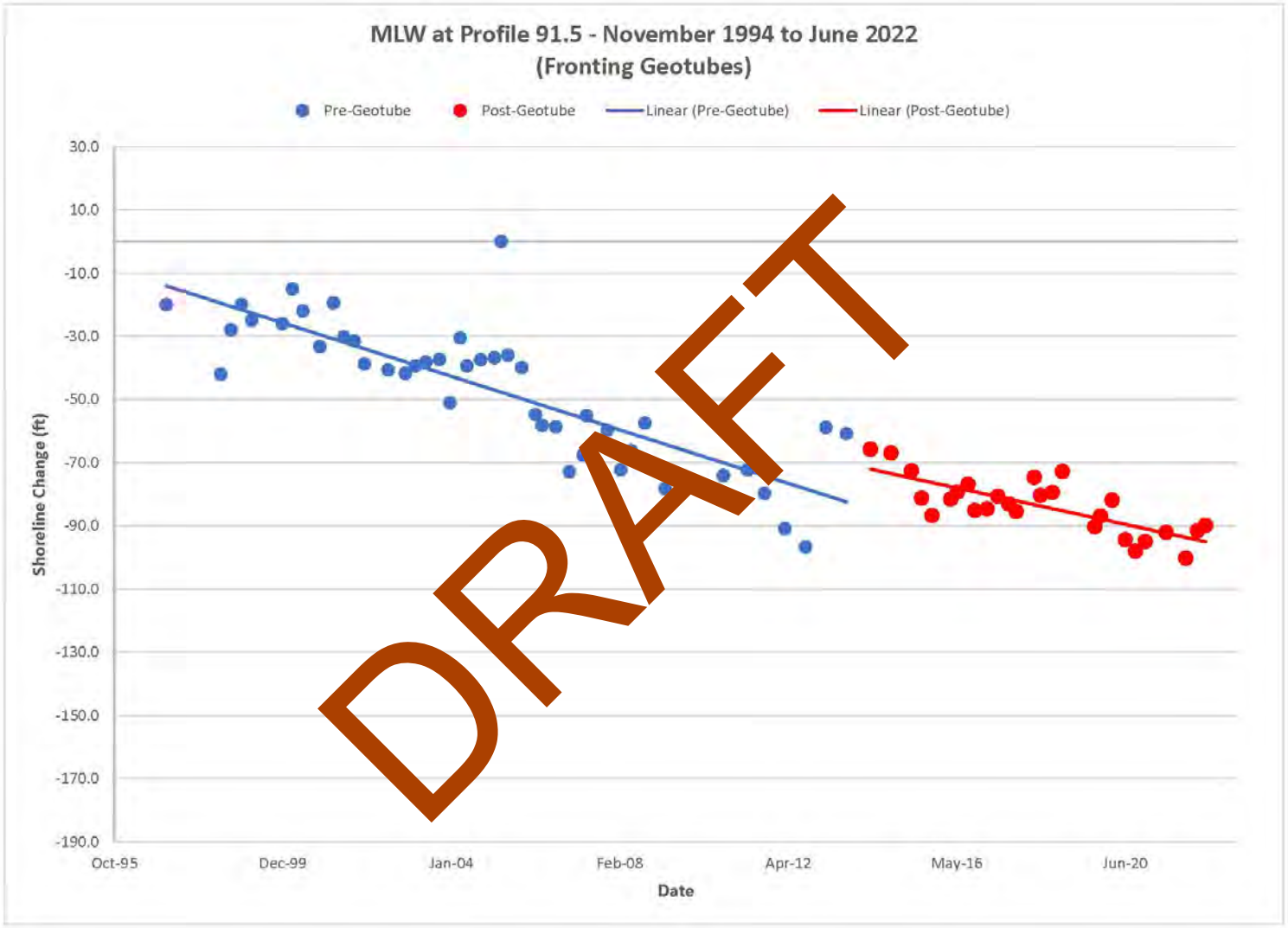


Baxter Road & Sconset Bluff Stabilization and Coastal Resiliency Project Nantucket, MA

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Figure 4, Sheet 9 of 16

MLW at Profile 91.35 – October 2014 to June 2022

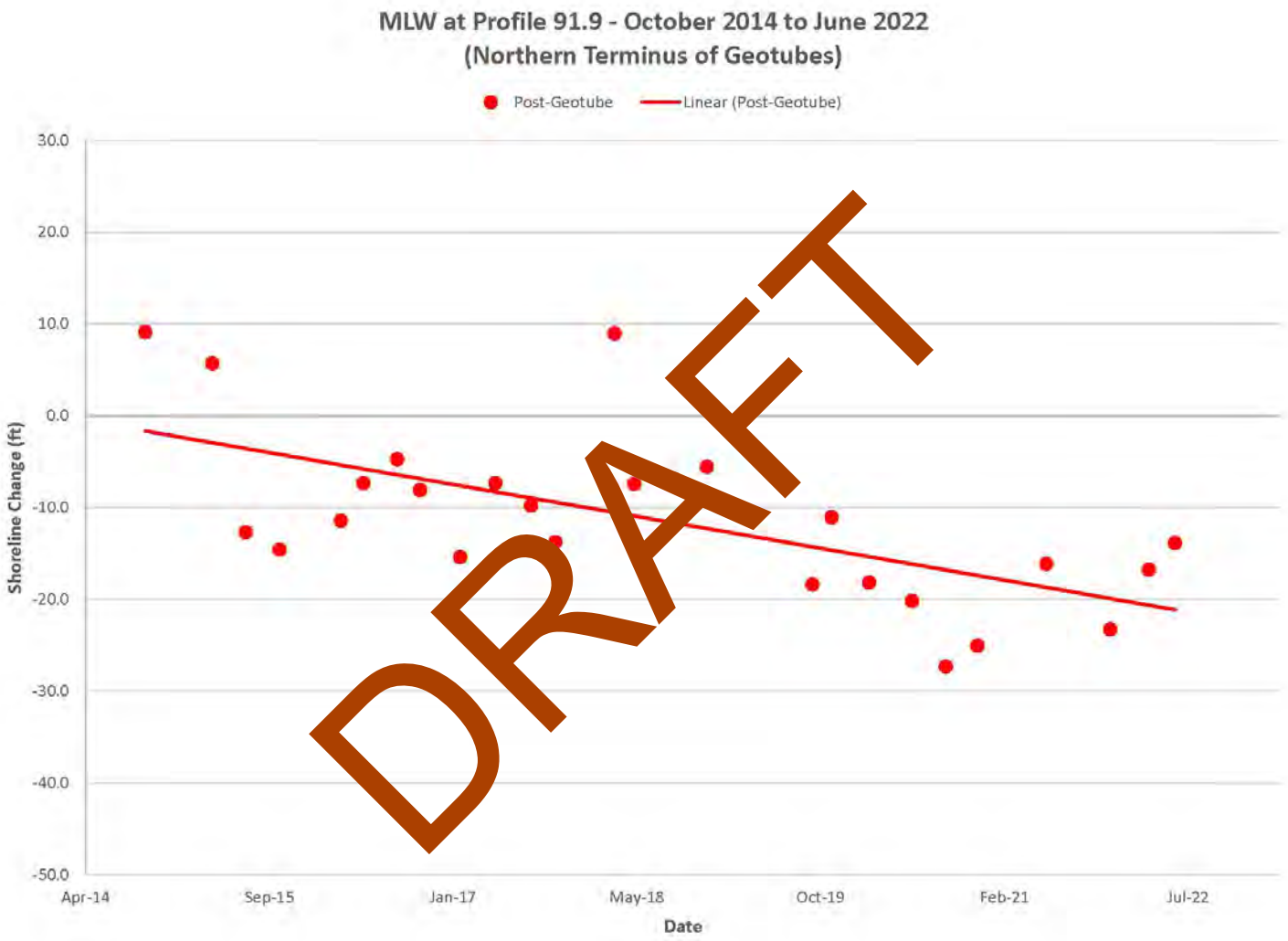


Baxter Road & Sconset Bluff Stabilization and Coastal Resiliency Project Nantucket, MA

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Figure 4, Sheet 10 of 16

MLW at Profile 91.5 – November 1994 to June 2022

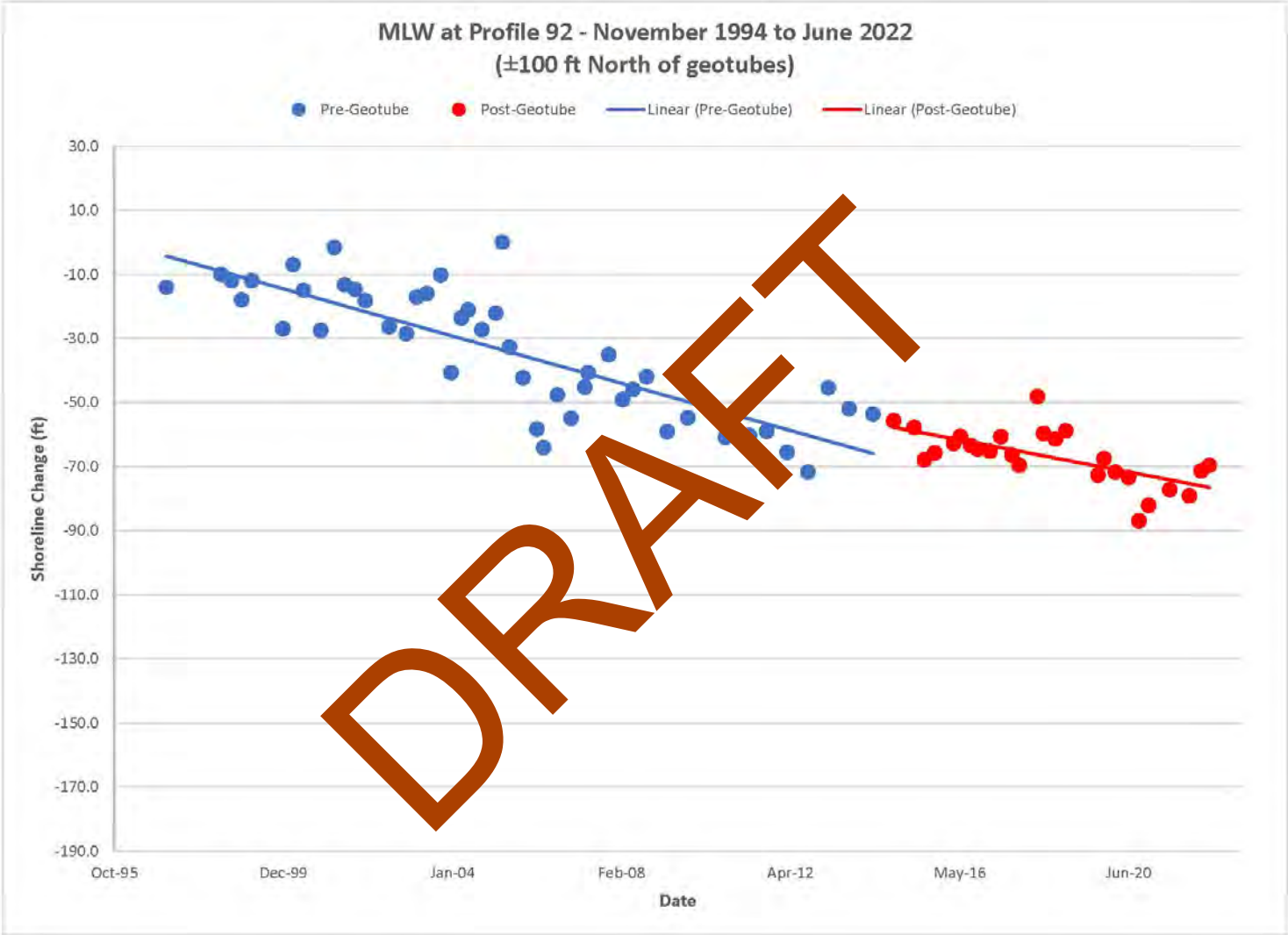


Baxter Road & Sconset Bluff Stabilization and Coastal Resiliency Project Nantucket, MA

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Figure 4, Sheet 11 of 16

MLW at Transect 91.9 – October 2014 to June 2022

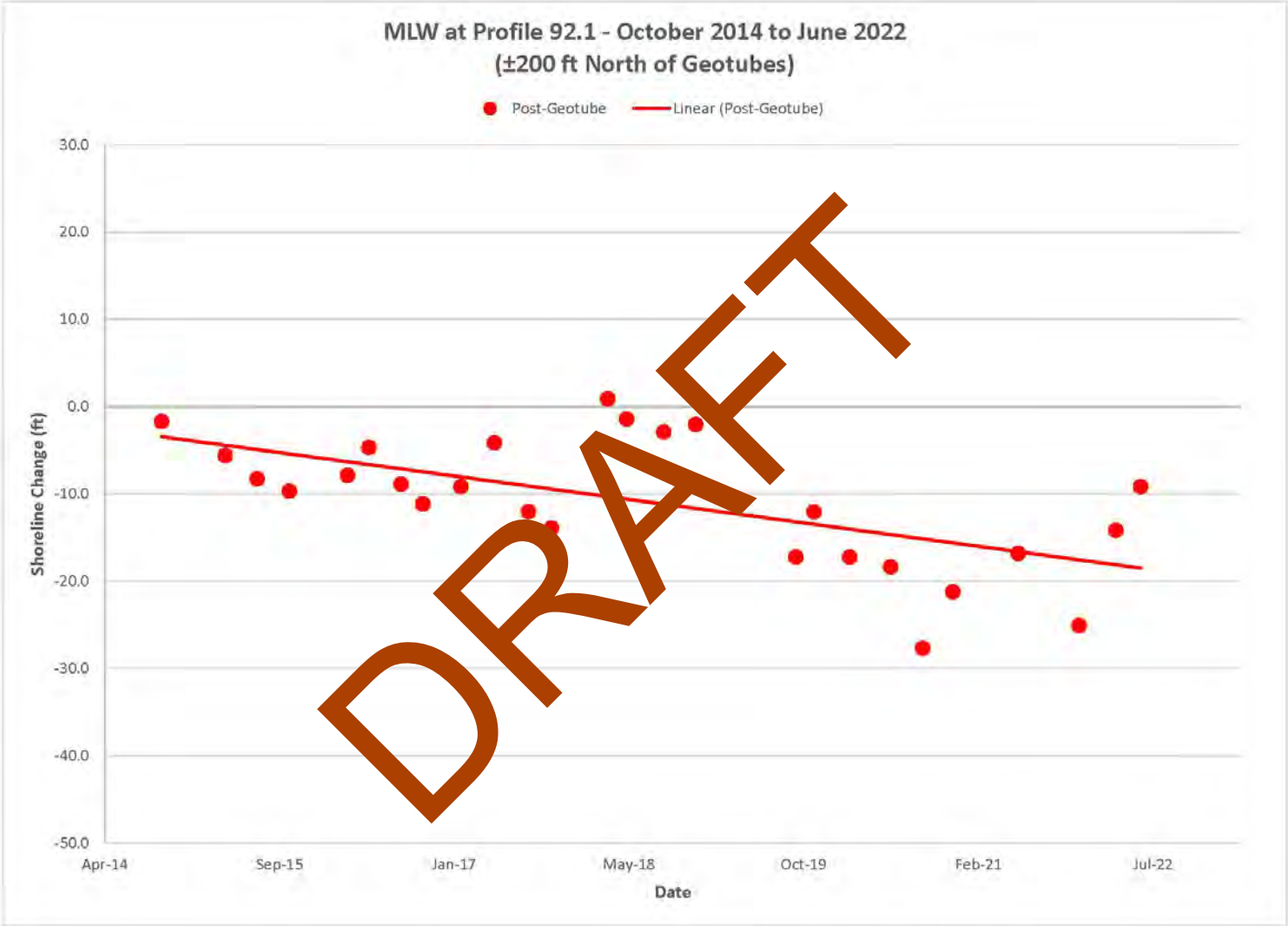


Baxter Road & Sconset Bluff Stabilization and Coastal Resiliency Project Nantucket, MA

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Figure 4, Sheet 12 of 16

MLW at Profile 92 – November 1994 to June 2022

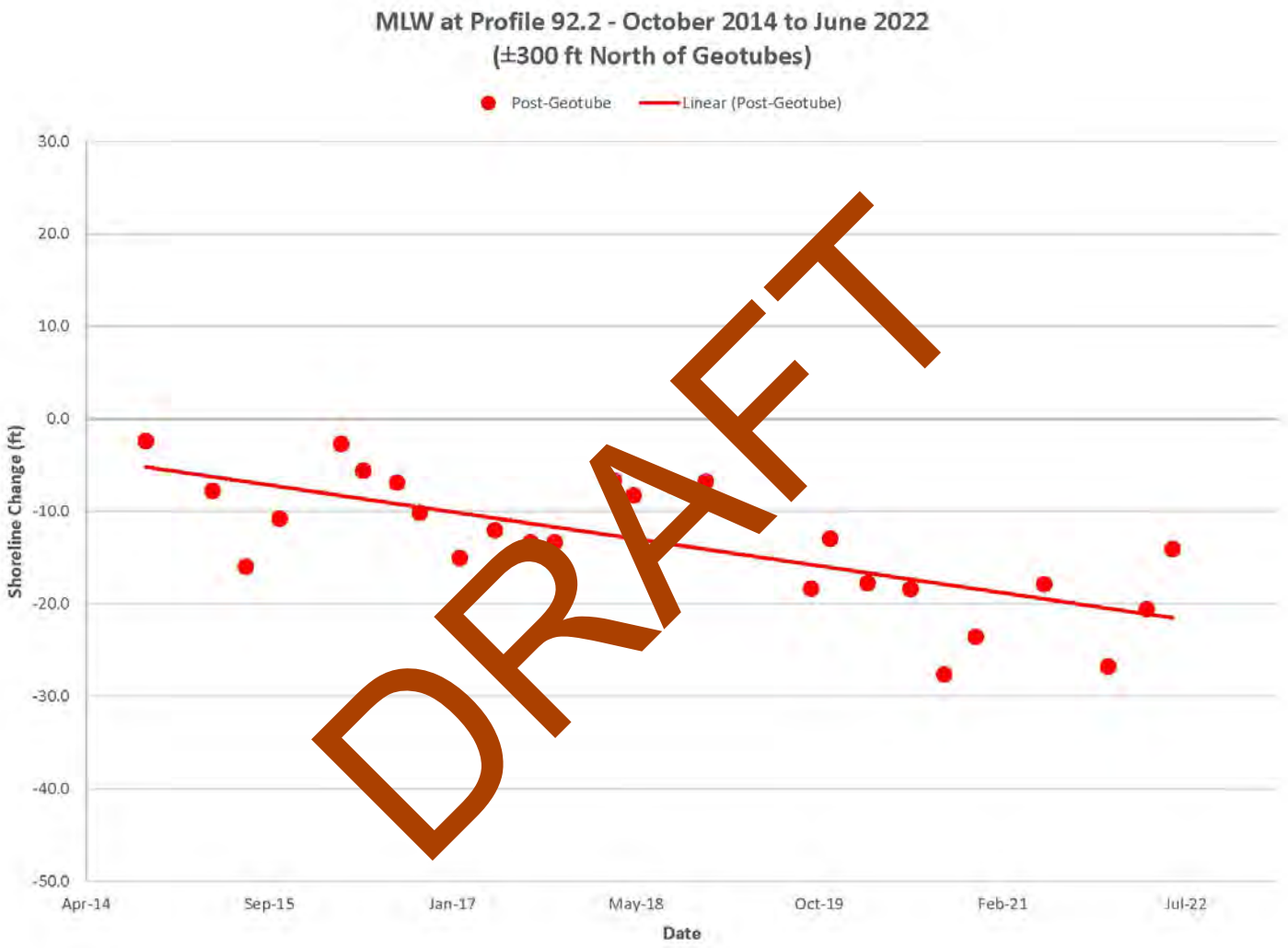


Baxter Road & Sconset Bluff Stabilization and Coastal Resiliency Project Nantucket, MA

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Figure 4, Sheet 13 of 16

MLW at Profile 92.1 – October 2014 to June 2022

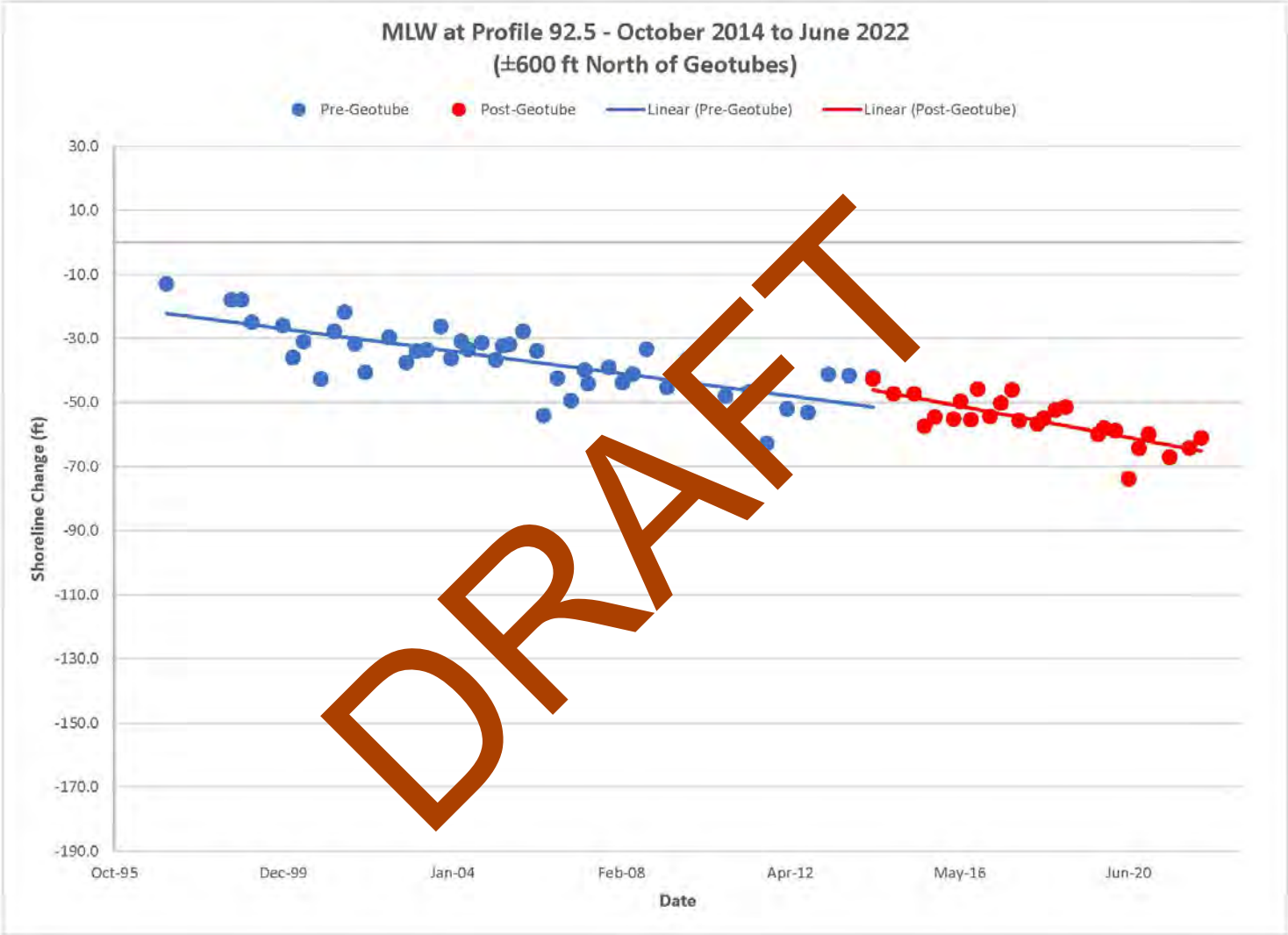


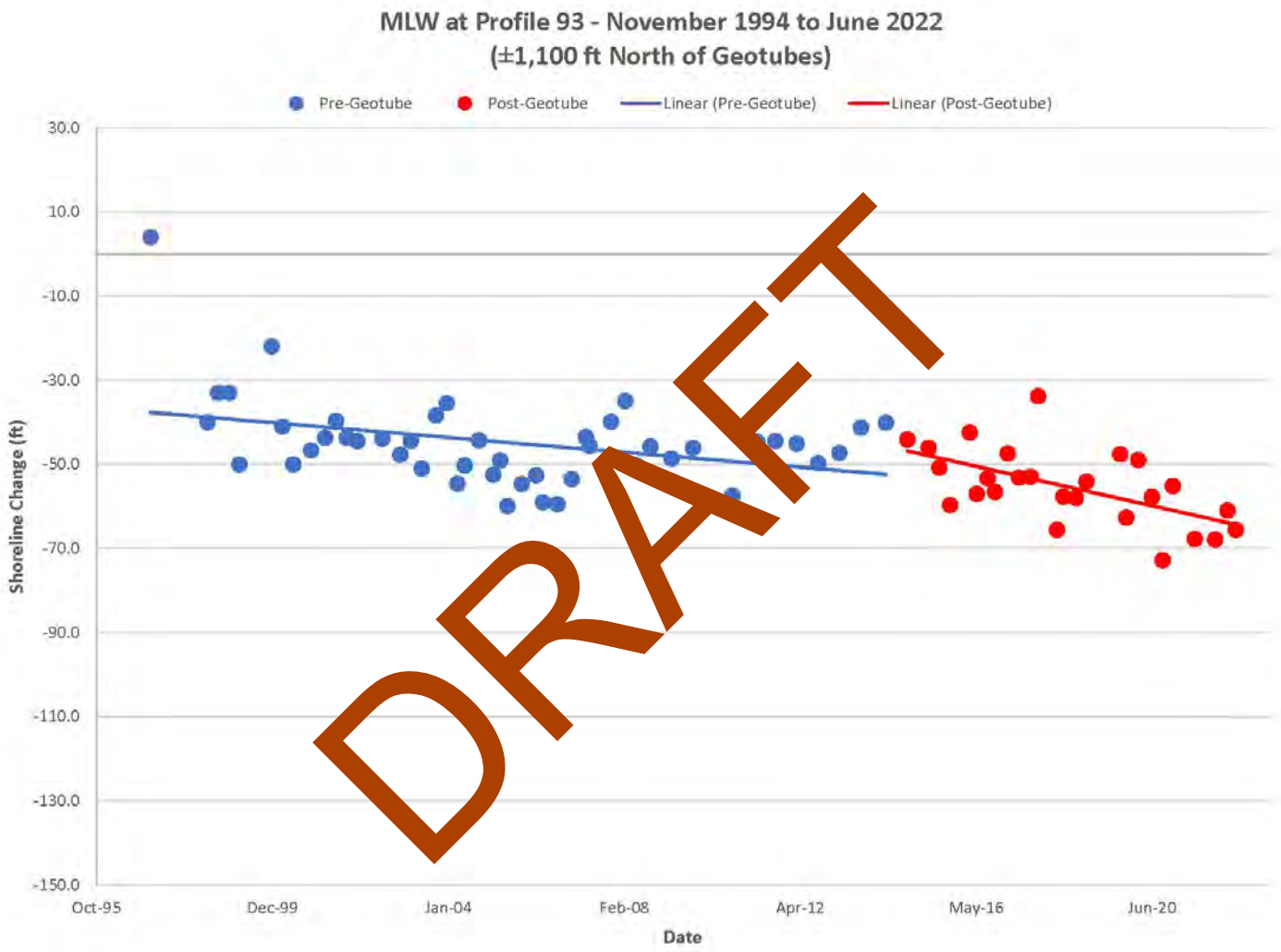
Baxter Road & Sconset Bluff Stabilization and Coastal Resiliency Project Nantucket, MA

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Figure 4, Sheet 14 of 16

MLW at Profile 92.2 – October 2014 to June 2022


MLW at Profile 92.5 - October 2014 to June 2022
(±600 ft North of Geotubes)
Pre-Geotube
Post-Geotube
Linear (Pre-Geotube)
Linear (Post-Geotube)
30.0
10.0
-10.0
-30.0
-50.0
-70.0
-90.0
-110.0
-130.0
-150.0
-170.0
-190.0
Shoreline Change (ft)
Oct-95
Dec-99
Jan-04
Feb-08
Apr-12
May-16
Jun-20
Date
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Baxter Road & Sconset Bluff Stabilization and Coastal Resiliency Project Nantucket, MA

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Figure 4, Sheet 16 of 16

MLW at Profile 93 – November 1994 to June 2022



Baxter Road & Sconset Bluff Stabilization and Coastal Resiliency Project Nantucket, MA

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Figure 5, Sheet 1 of 7

October 2021 (Google Earth) Existing Conditions Lots 109 to 119

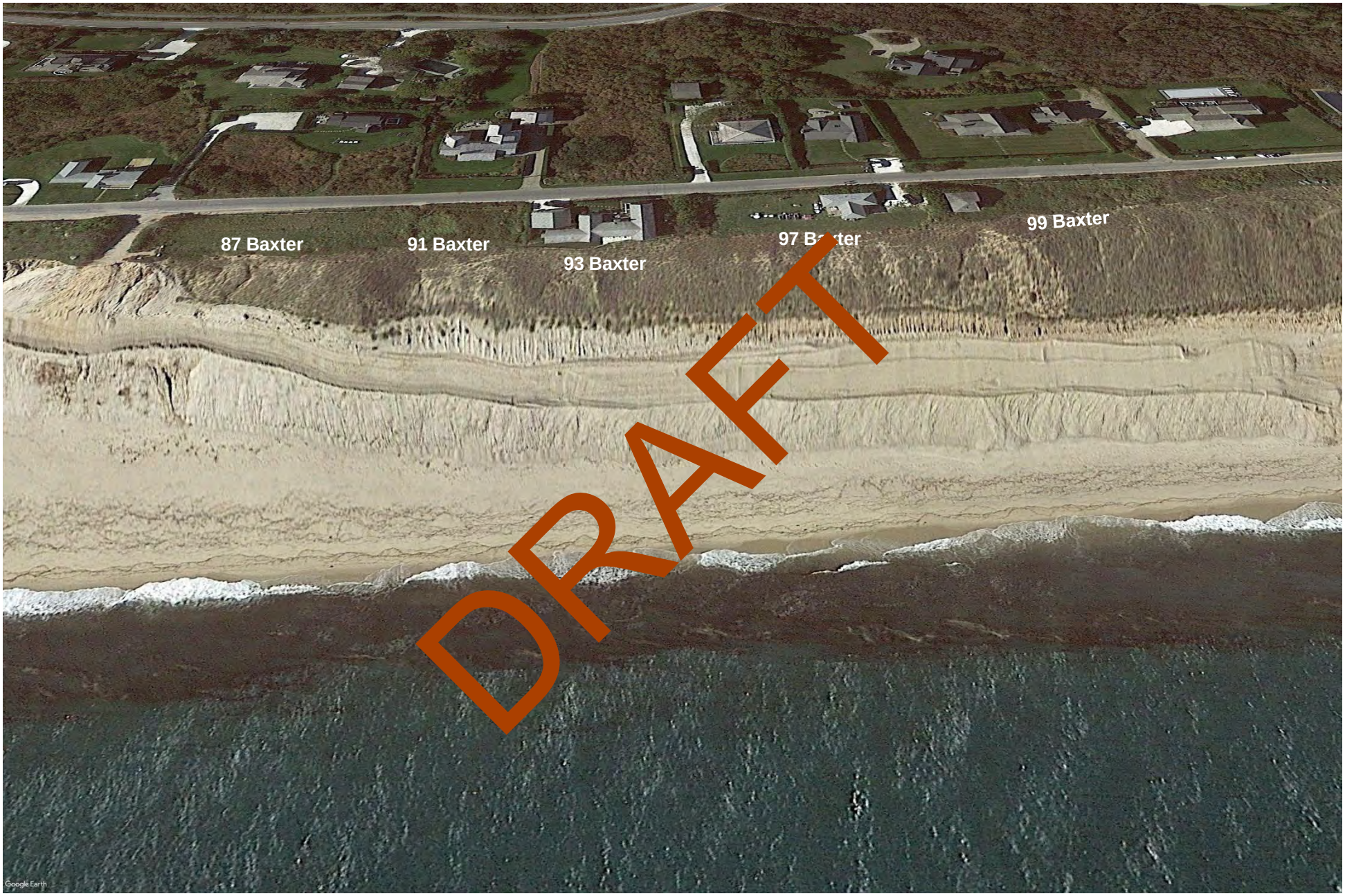


Baxter Road & Sconset Bluff Stabilization and Coastal Resiliency Project Nantucket, MA

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Figure 5, Sheet 2 of 7

October 2021 (Google Earth) Existing Conditions Lots 101 to 109



Baxter Road & Sconset Bluff Stabilization and Coastal Resiliency Project Nantucket, MA

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Figure 5, Sheet 3 of 7

October 2021 (Google Earth) Existing Conditions Lots 87 to 99



Baxter Road & Sconset Bluff Stabilization and Coastal Resiliency Project Nantucket, MA

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Figure 5, Sheet 4 of 7

October 2021 (Google Earth) Existing Conditions Lots 75 to 85

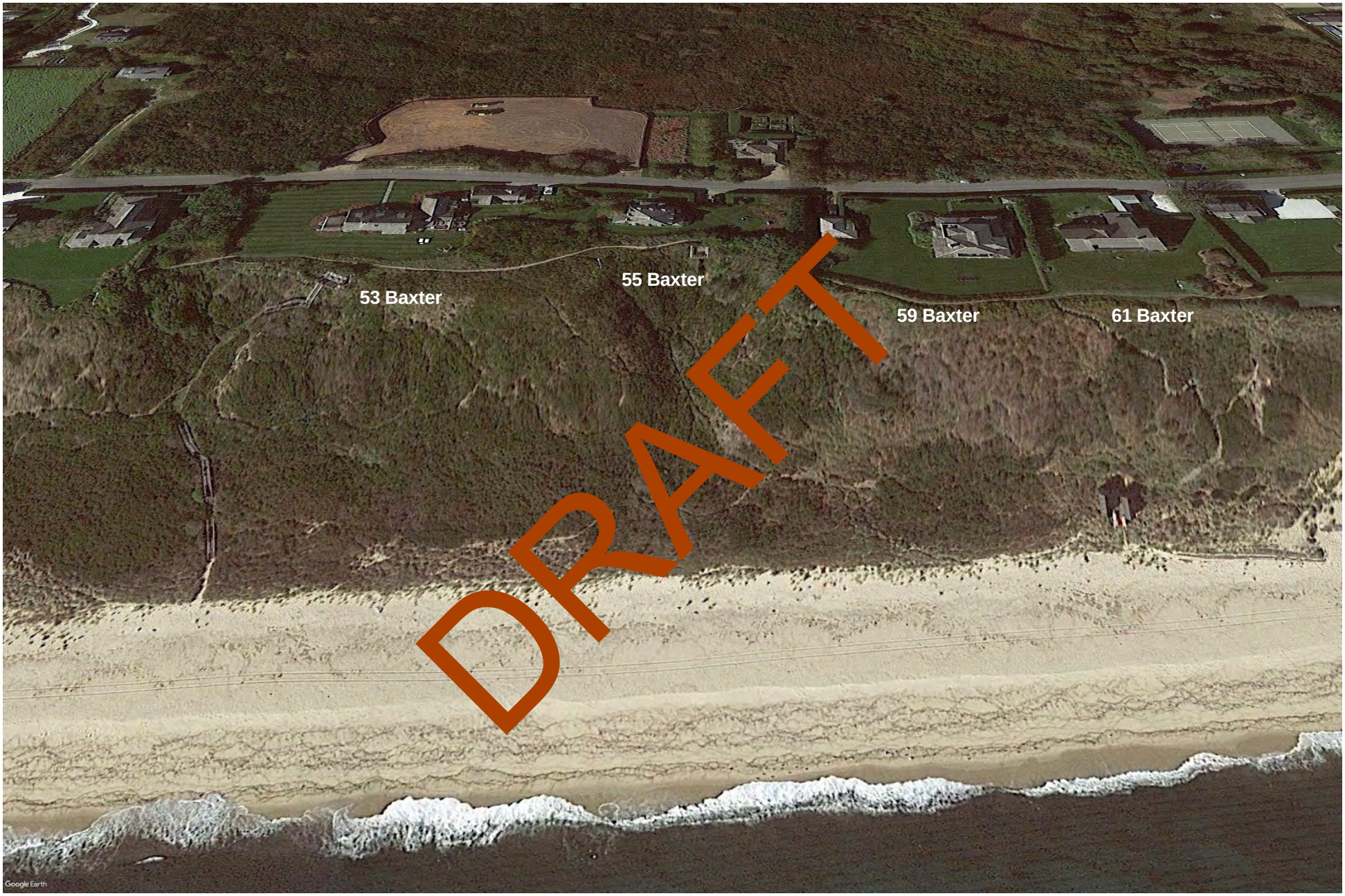


Baxter Road & Sconset Bluff Stabilization and Coastal Resiliency Project Nantucket, MA

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Figure 5, Sheet 5 of 7

October 2021 (Google Earth) Existing Conditions Lots 63 to 73

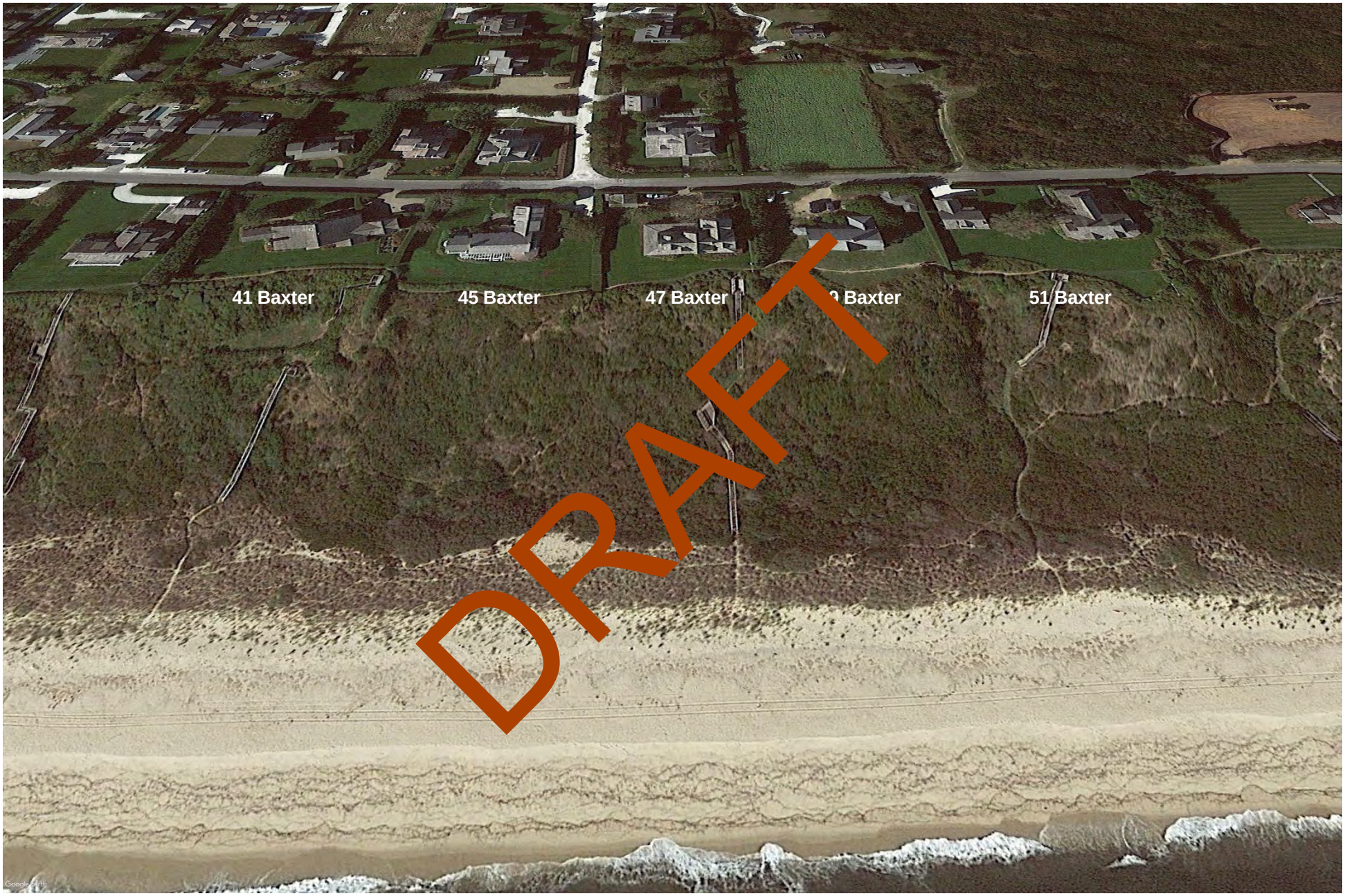


Baxter Road & Sconset Bluff Stabilization and Coastal Resiliency Project Nantucket, MA

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Figure 5, Sheet 6 of 7

October 2021 (Google Earth) Existing Conditions Lots 53 to 61



Baxter Road & Sconset Bluff Stabilization and Coastal Resiliency Project Nantucket, MA

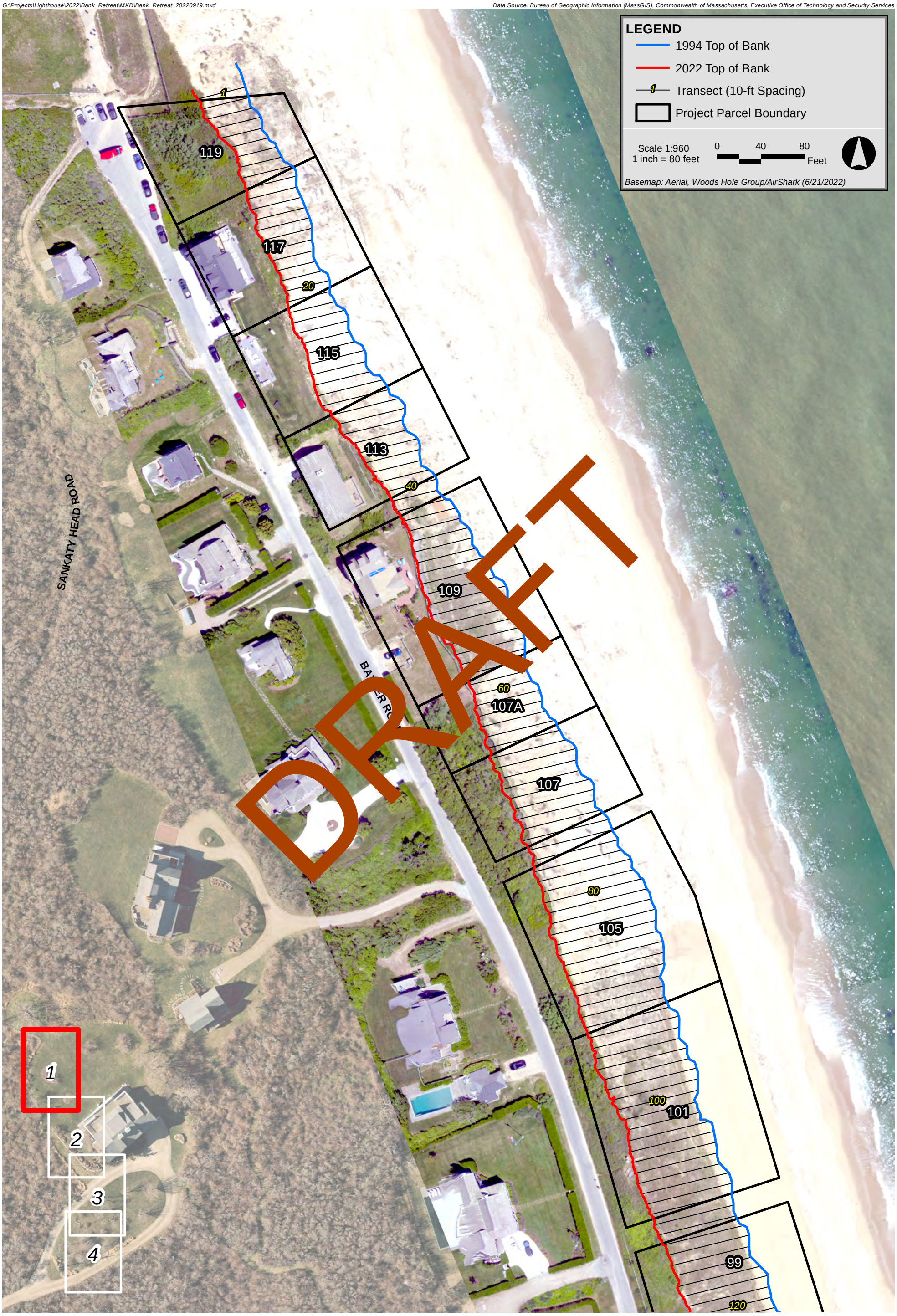
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Figure 5, Sheet 7 of 7

October 2021 (Google Earth) Existing Conditions Lots 41 to 51

G:\Projects\Lighthouse\2022\Bank_Retreat\MXD\Bank_Retreat_20220919.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Baxter Road Nantucket, Massachusetts

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Figure 6 (Sheet 1 of 5)

Coastal Bluff Retreat, 1994 - 2022

G:\Projects\Lighthouse\2022\Bank_Retreat\MXD\Bank_Retreat_20220919.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Baxter Road Nantucket, Massachusetts

Figure 6 (Sheet 2 of 5)

Coastal Bluff Retreat, 1994 - 2022

G:\Projects\Lighthouse\2022\Bank_Retreat\MXD\Bank_Retreat_20220919.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Baxter Road Nantucket, Massachusetts

Epsilon Associates Inc.

Figure 6 (Sheet 3 of 5)

Coastal Bluff Retreat, 1994 - 2022

G:\Projects\Lighthouse\2022\Bank_Retreat\MXD\Bank_Retreat_20220919.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

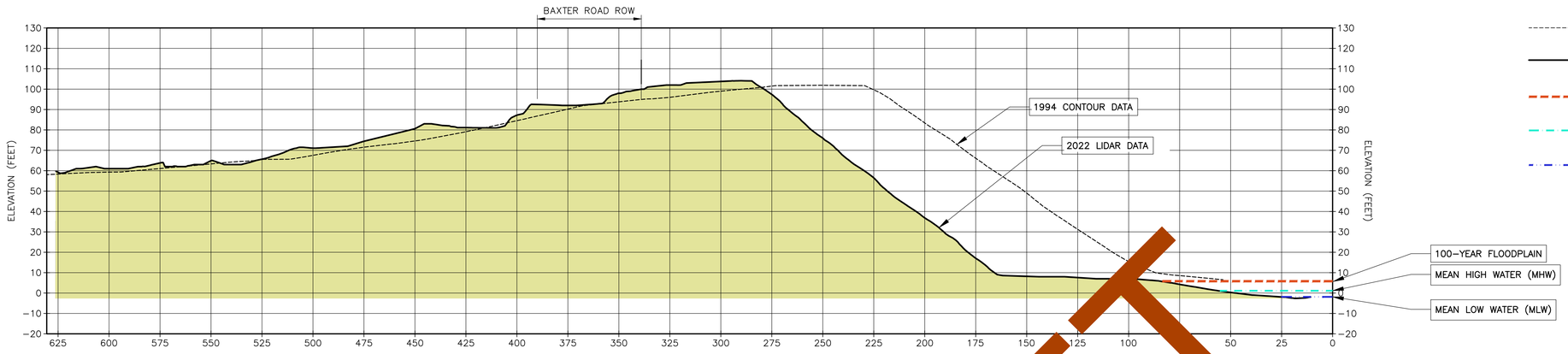


Baxter Road Nantucket, Massachusetts

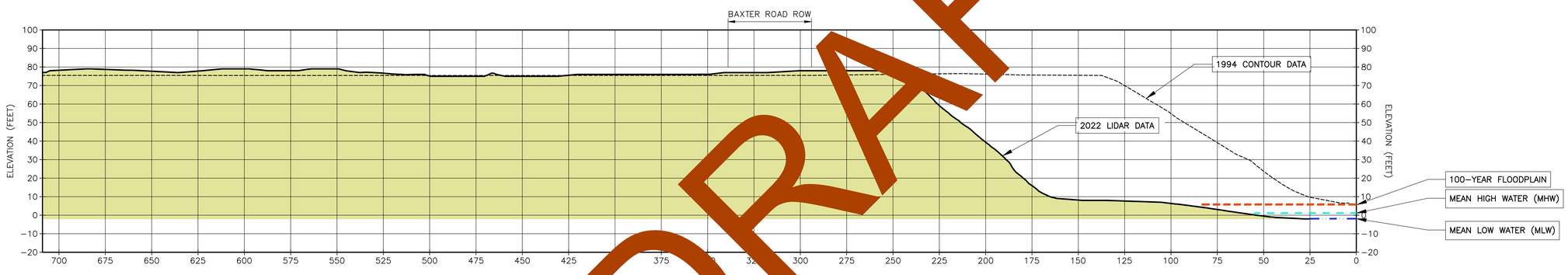
Epsilon Associates Inc.

Figure 6 (Sheet 4 of 5)

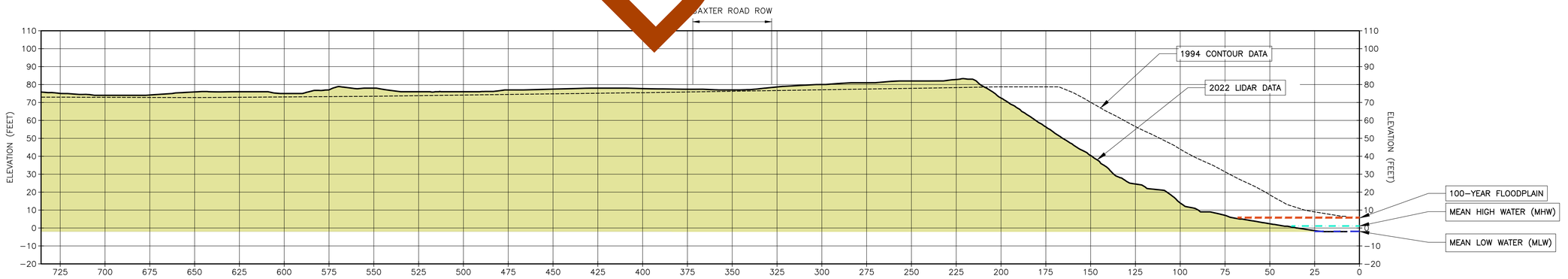
Coastal Bluff Retreat, 1994 - 2022



TRANSECT 24 (LOCATION- APPROXIMATELY 115 BAXTER ROAD)



TRANSECT 198 (LOCATION- APPROXIMATELY 85 BAXTER ROAD)



TRANSECT 234 (LOCATION- APPROXIMATELY 79 BAXTER ROAD)

LEGEND

- 1994 CONTOUR DATA
- 2022 LIDAR DATA
- 100–YEAR FLOODPLAIN ELEV. 5.80' NAVD
- MEAN HIGH WATER (MHW) ELEV. 1.12' NAVD
- MEAN LOW WATER (MLW) ELEV. –1.88' NAVD

1" = 30'
15 0 30

DRAFT

REVISIONS

Proj. Mgr: DD
Designed : JC
Drawn : JC
Checked : DD
Scale : AS NOTED
Date : SEPT 2022

COASTAL BLUFF RETREAT 1994-2022

BLUFF RETREAT
SCONSET, MA

Proj. No.

Dwg. No.

FIG. 6

SHEET 5 OF 5

PROGRESS PRINT–NOT FOR CONSTRUCTION

G:\Projects\Lighthouse\2022\NOI\MXD\Fig 7_Year_Built_20220908.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Baxter Road & Sconset Bluff Stabilization and Coastal Resiliency Project Nantucket, MA

Epsilon Associates Inc.

Figure 7

Pre-1978 House Status

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Baxter Road & Sconset Bluff Stabilization and Coastal Resiliency Project **Nantucket, MA**

Figure 8, Map Sheet 1 of 6

Existing Conditions (June 2021): Lots 107 to 119

G:\Projects\Lighthouse\2022\NO\MXD\Fig 8_Setback_Survey_20220328_Sheet2.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

LEGEND

Setback
(Nearest Point on Lot to Nearest Point on Top of Bank)

Top of Bank (2021)*

**Based on LiDAR topography and demarcated by break in slope.*

Scale 1:720
1 inch = 60 feet

0 30 60 Feet

Basemap: Aerial, Woods Hole Group/AirShark (6/14/2021)



Baxter Road & Sconset Bluff Stabilization and Coastal Resiliency Project **Nantucket, MA**

Epsilon Associates Inc.

Figure 8, Map Sheet 2 of 6

Existing Conditions (June 2021): Lots 93 to 107

G:\Projects\Lighthouse\2022\NO\MXD\Fig 8_Setback_Survey_20220328_Sheet3.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

LEGEND

Setback
(Nearest Point on Lot to Nearest Point on Top of Bank)

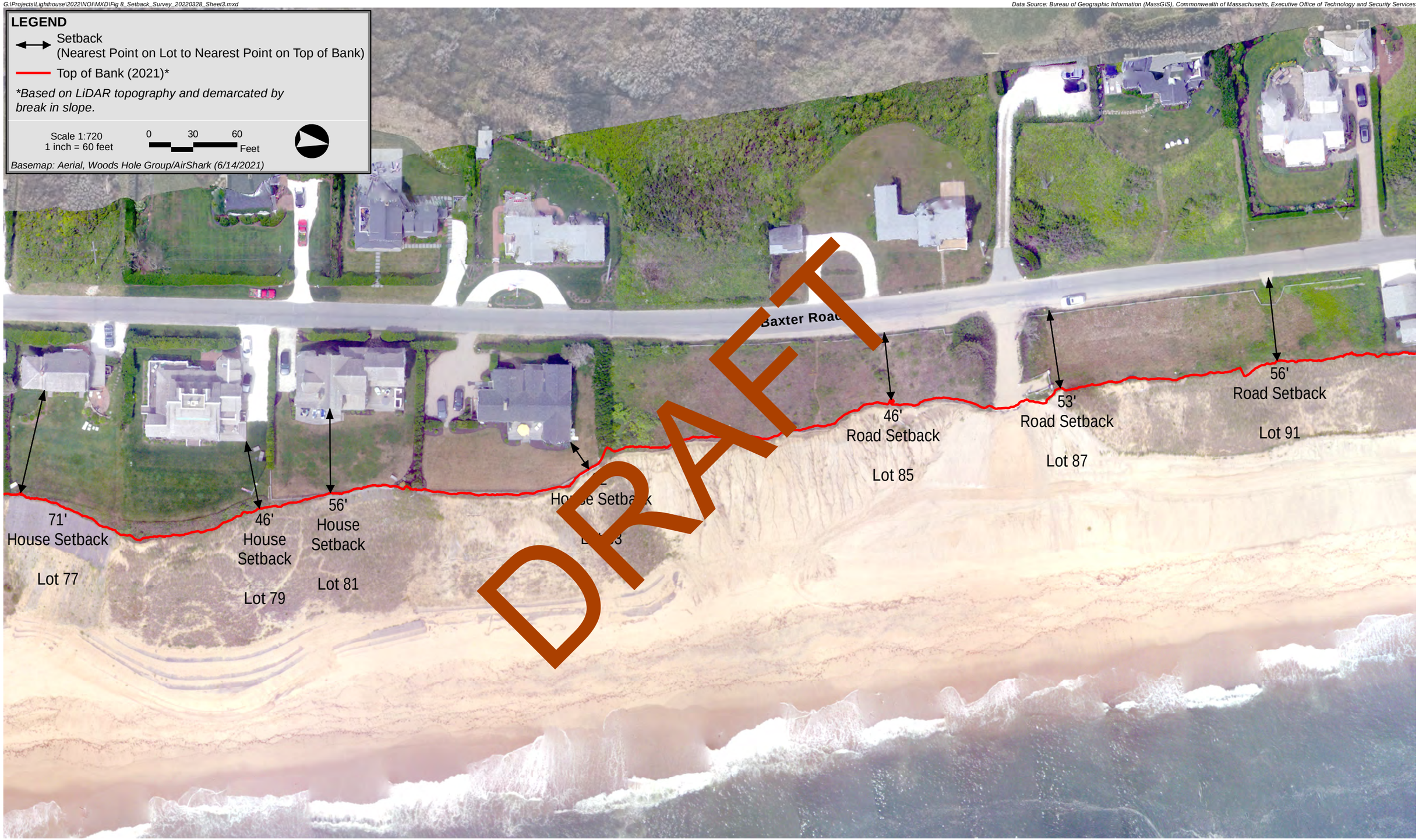
Top of Bank (2021)*

**Based on LiDAR topography and demarcated by break in slope.*

Scale 1:720
1 inch = 60 feet

0 30 60 Feet

Basemap: Aerial, Woods Hole Group/AirShark (6/14/2021)



Baxter Road & Sconset Bluff Stabilization and Coastal Resiliency Project **Nantucket, MA**

Epsilon Associates Inc.

Figure 8, Map Sheet 3 of 6

Existing Conditions (June 2021): Lots 77 to 91

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



G:\Projects\Lighthouse\2022\NO\MXD\Fig 8_Setback_Survey_20220328_Sheet5.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



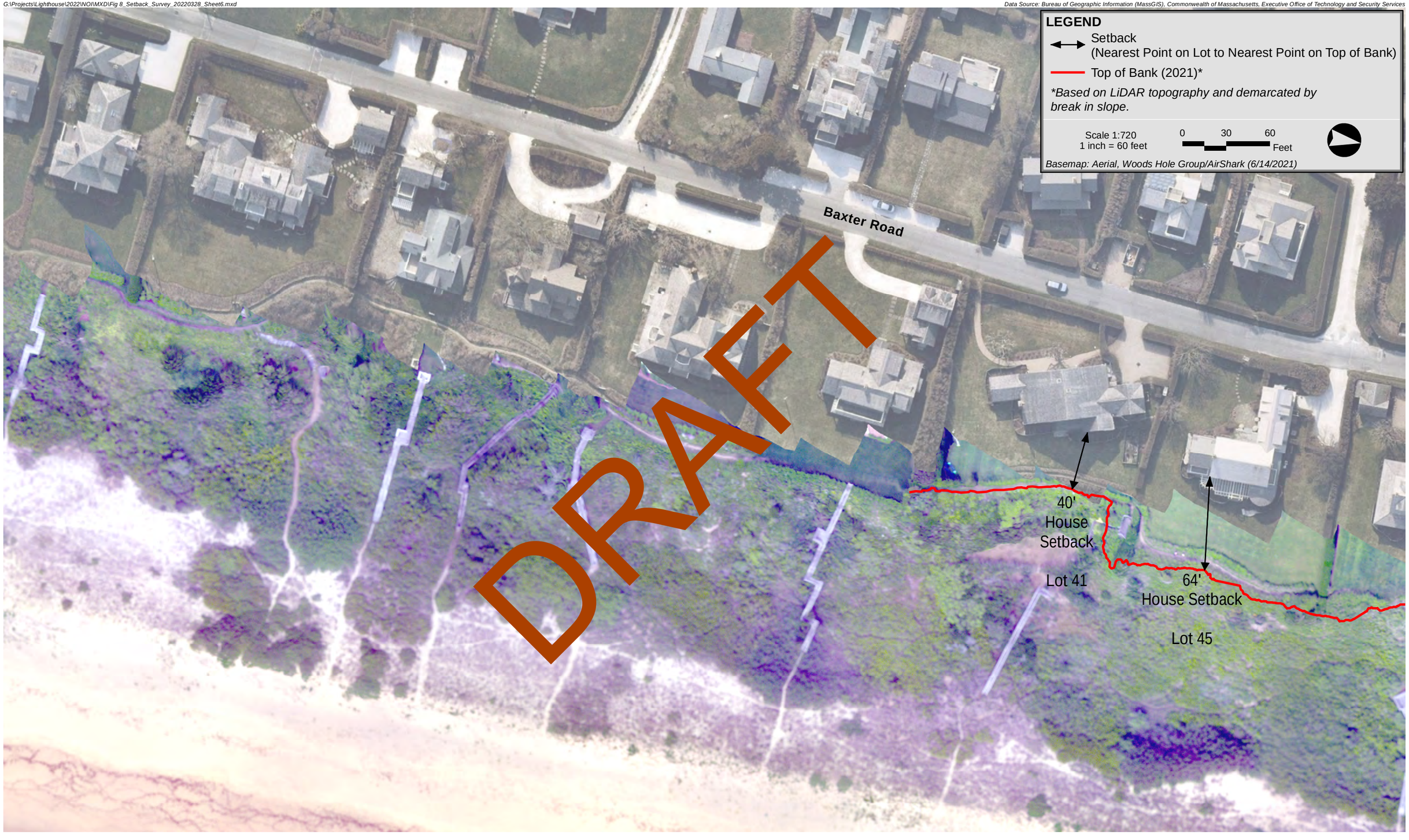
Baxter Road & Sconset Bluff Stabilization and Coastal Resiliency Project **Nantucket, MA**

Epsilon Associates Inc.

Figure 8, Map Sheet 5 of 6

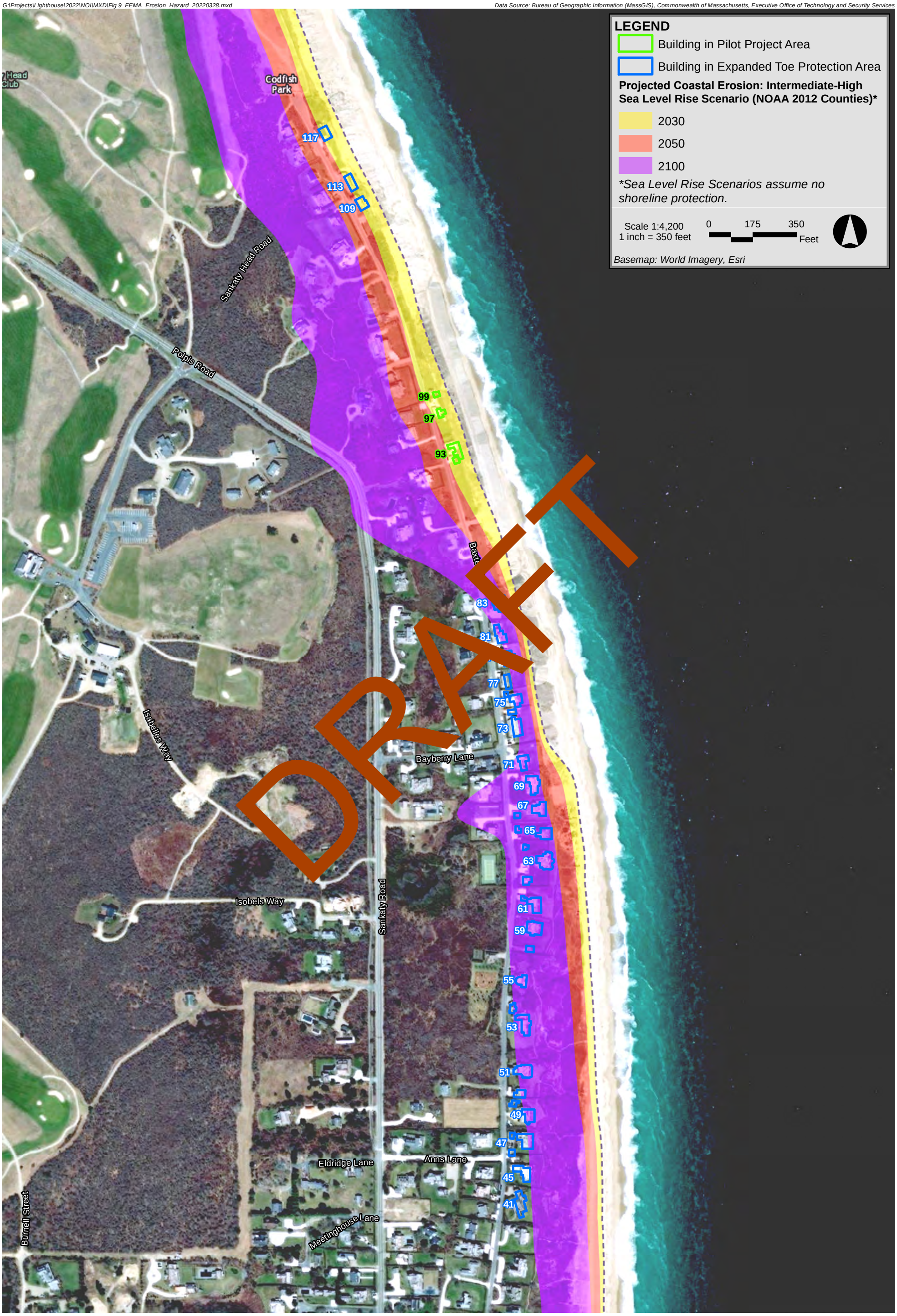
Existing Conditions (June 2021): Lots 47 to 59

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



G:\Projects\Lighthouse\2022\NOI\MXD\Fig 9_FEMA_Erosion_Hazard_20220328.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Baxter Road & Sconset Bluff Stabilization and Coastal Resiliency Project **Nantucket, MA**

Epsilon Associates Inc.

Figure 9

FEMA Coastal Erosion Hazard Map

G:\Projects\Lighthouse\2022\NOI\MXD\Fig 10_Wetland_Resource_Areas_20221020.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Baxter Road & Sconset Bluff Stabilization and Coastal Resiliency Project **Nantucket, MA**

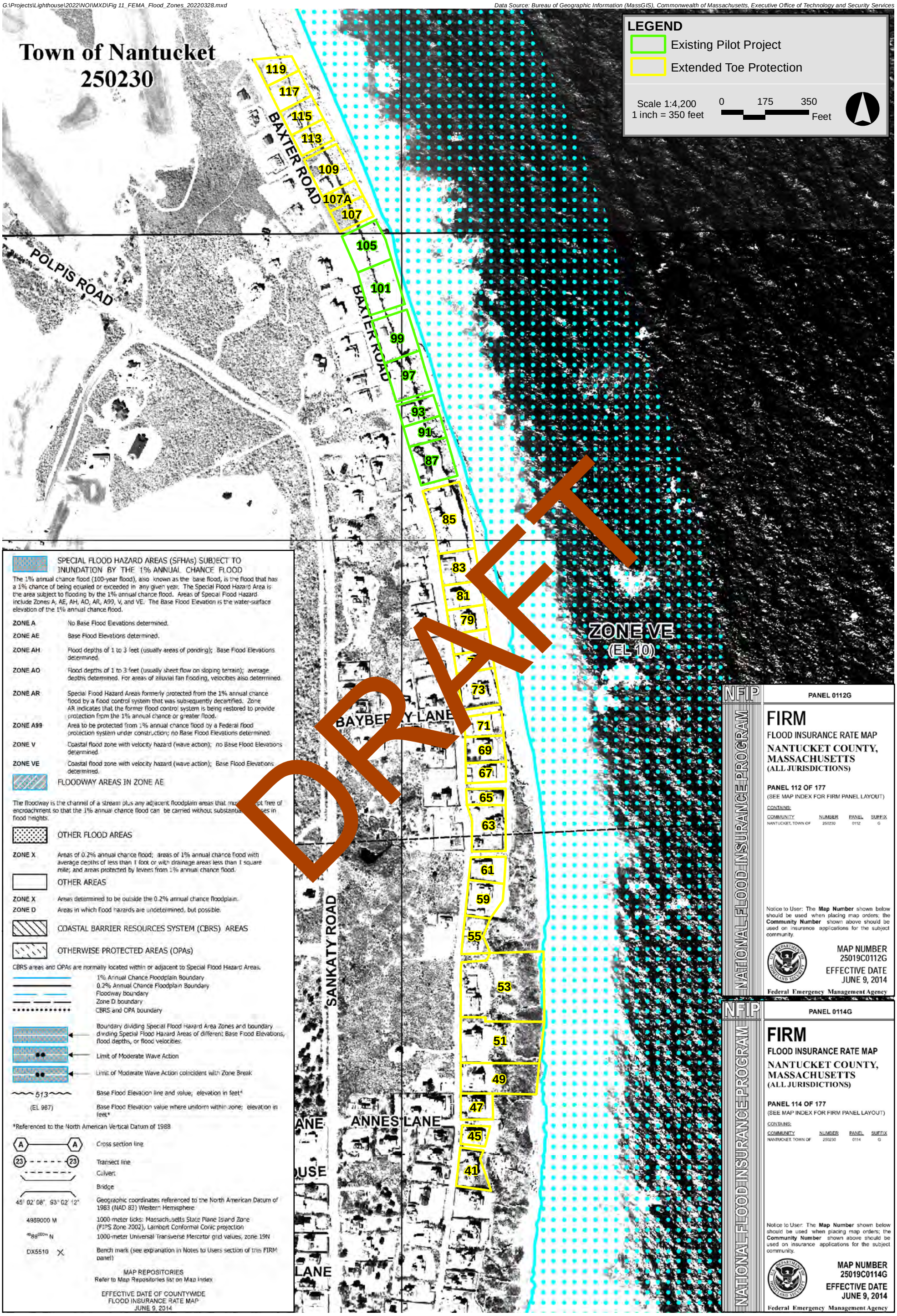
Epsilon Associates Inc.

Figure 10

Wetland Resource Areas

G:\Projects\Lighthouse\2022\NOI\MXD\Fig 11_FEMA_Flood_Zones_20220328.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



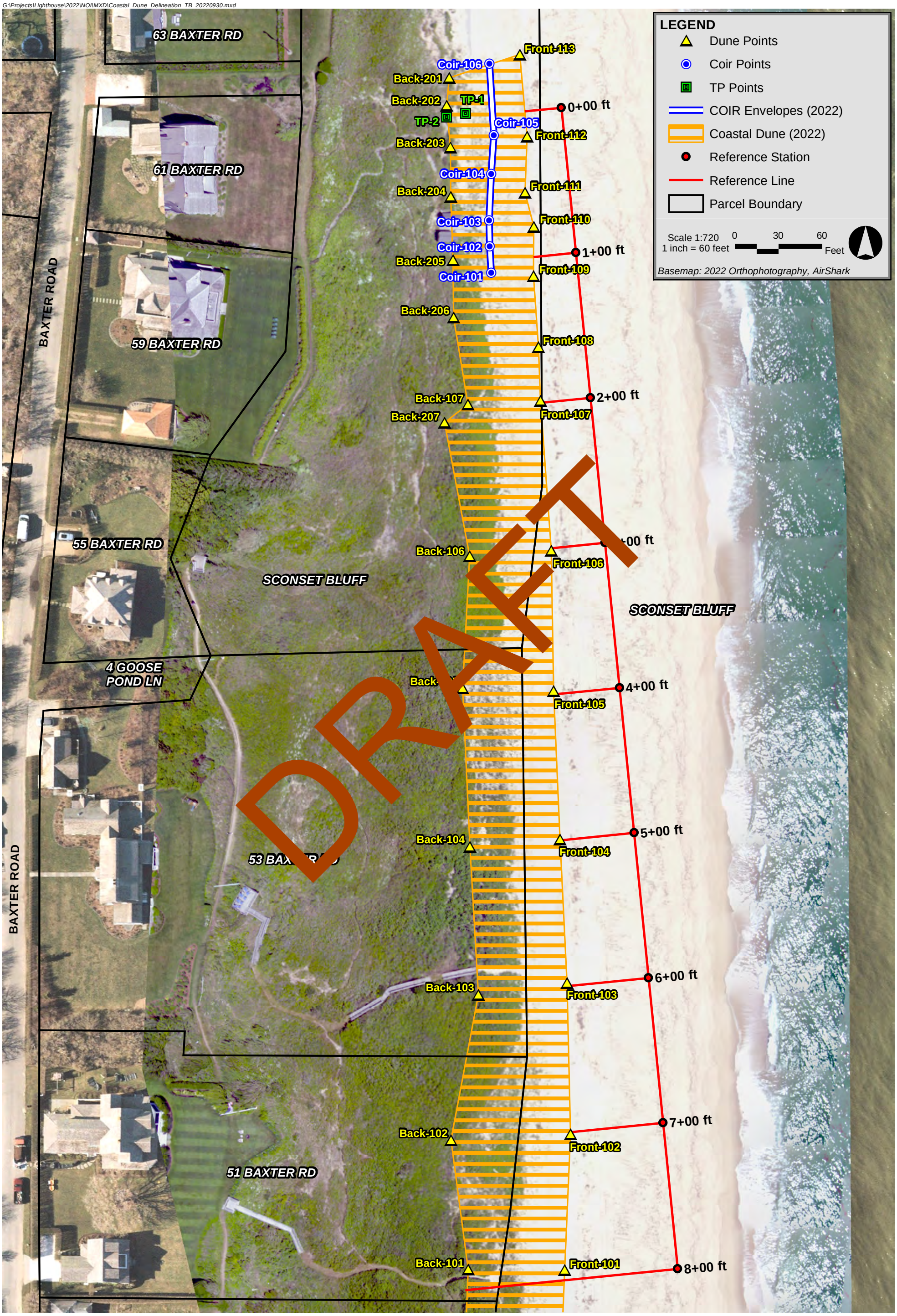
Baxter Road & Sconset Bluff Stabilization and Coastal Resiliency Project Nantucket, MA

Epsilon ASSOCIATES INC.

Figure 11

Flood Map (FIRM Panel Map 25019C0112G and 25019C0114G)

G:\Projects\Lighthouse\2022\NOI\MXD\Coastal_Dune_Delineation_TB_20220930.mxd



Baxter Road & Sconset Bluff Stabilization and Coastal Resiliency Project **Nantucket, MA**

Epsilon ASSOCIATES INC.

Figure 12

Coastal Dune Delineation (September 2022)

G:\Projects\Lighthouse\2022\NOI\MXD\Fig 13_NHESP_Habitat_Map_20220329.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

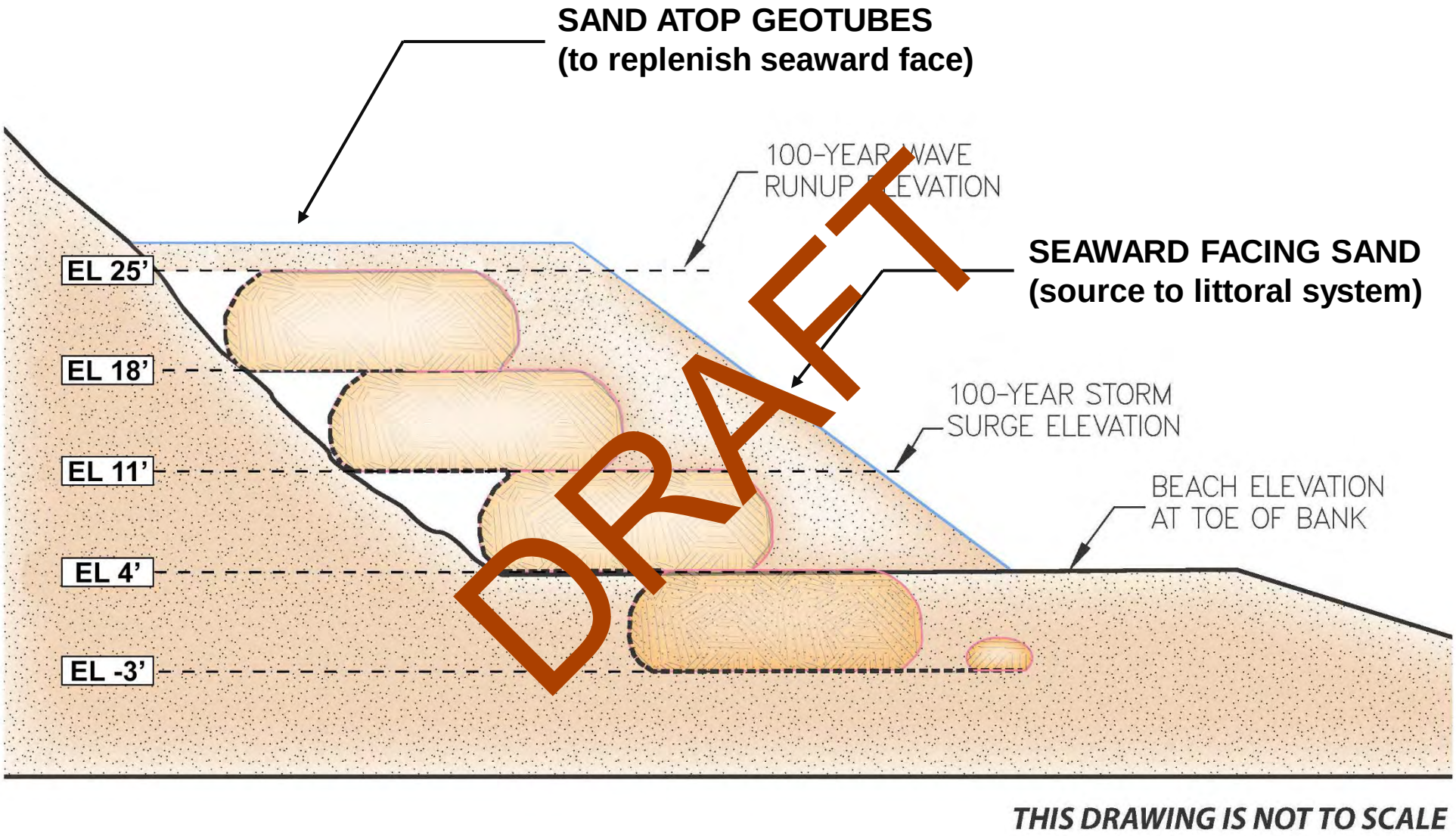


Baxter Road & Sconset Bluff Stabilization and Coastal Resiliency Project Nantucket, MA

Epsilon Associates Inc.

Figure 13

NHESP Habitat Map



Baxter Road & Sconset Bluff Stabilization and Coastal Resiliency Project Nantucket, MA

Epsilon ASSOCIATES INC.

Figure 14
Basis of Coastal Engineering Design



Baxter Road & Sconset Bluff Stabilization and Coastal Resiliency Project Nantucket, MA

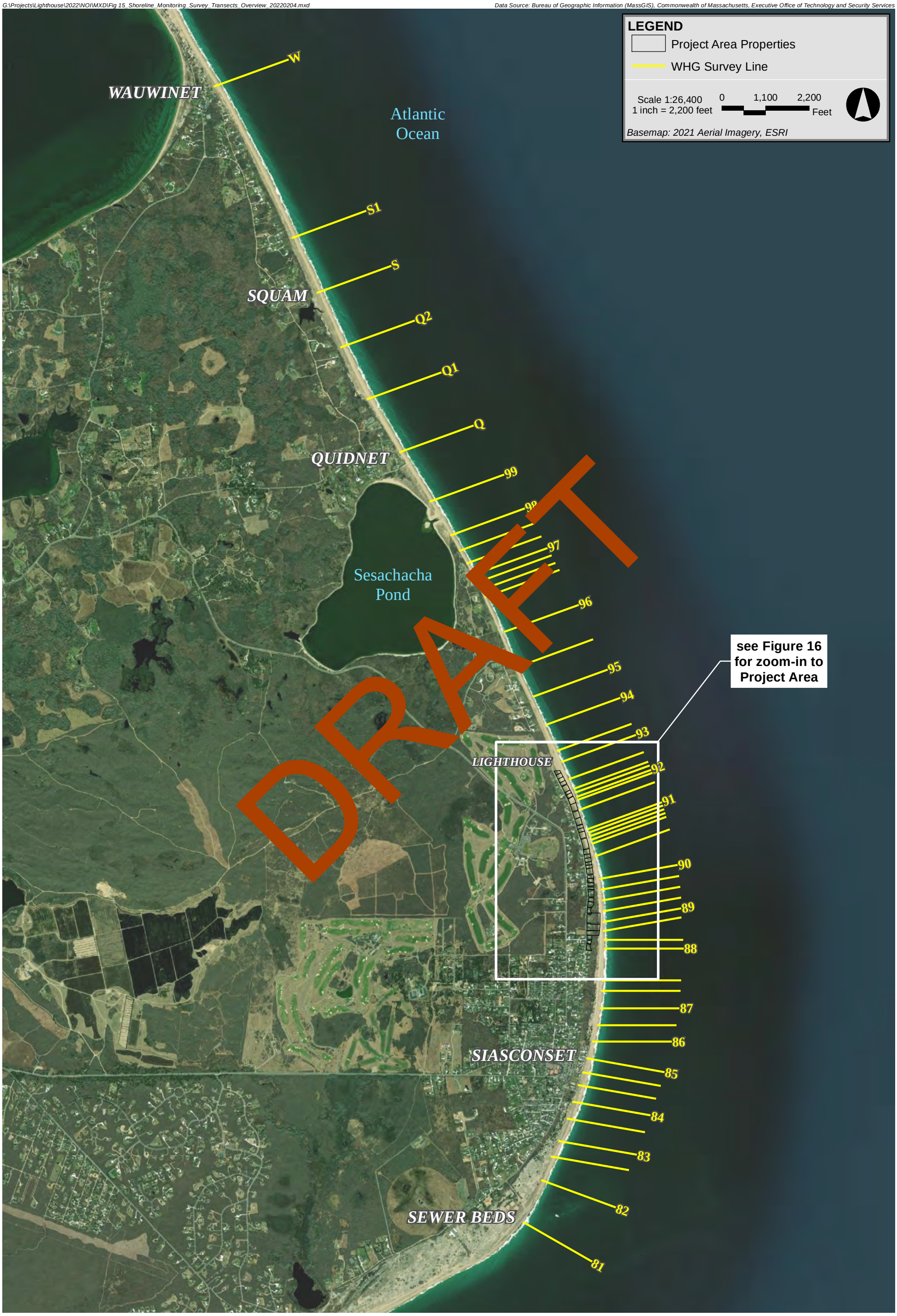
Epsilon ASSOCIATES INC.

Figure 15

Vegetation in Existing Pilot Project Area, June 2022

G:\Projects\Lighthouse\2022\NOI\MXD\Fig 15_Shoreline_Monitoring_Survey_Transects_Overview_20220204.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Baxter Road & Sconset Bluff Stabilization and Coastal Resiliency Project **Nantucket, MA**

Epsilon Associates Inc.

Figure 16

Shoreline Monitoring Survey Transects - Wauwinet to Sewer Beds

G:\Projects\Lighthouse\2022\NOI\MXD\Fig 16_Shoreline_Monitoring_Survey_Transects_in_Project_Area_20220329.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Baxter Road & Sconset Bluff Stabilization and Coastal Resiliency Project Nantucket, MA

Epsilon Associates Inc.

Figure 17

Shoreline Monitoring Survey Transects - Project Area



Photo 3: View of the Coastal Bank in vicinity of the northern property line at 67 Baxter Road.

DRAFT



Photo 4: View of Coastal Bank at 67 Baxter Road. Note scarp at the top of the bank, and rill erosion on the exposed sand face. Coir rolls are installed along the toe of the Coastal Bank.



Photo 5: View of the Coastal Bank in vicinity of the northern property line at 67 Baxter Road.

DRAFT



Photo 6: View of Coastal Bank at 67 Baxter Road. Note scarp at the top of the bank, and rill erosion on the exposed sand face. Coir rolls are installed along the toe of the Coastal Bank.



Photo 7: View just north of stairs, note mid slope exposed sand to the left and scarp to the right.

DRAFT



Photo 8: View of stairs between Lots 67 and 65.



Photo 9: View at 65 Baxter Road. Note linear erosion feature and coir rolls at the toe of Coastal Bank.

DRAFT



Photo 10: View at 65 Baxter Road.



Photo 11: View at 65 Baxter Road. Note top of bank scarp and mid-slope slope failure.

DRAFT



Photo 12: View in vicinity of Lots 63 & 65 Baxter Road, note slope failure and scarp.



Photo 13: View at 63 Baxter Road. Note top of bank scarp and mid-slope slope failure.

DRAFT



Photo 14: View in vicinity of 61 & 63 Baxter Road, note scarp at the top of the bank, mid-slope slope failure and scarp at the toe of the bank.



Photo 15: View at 63 / 61 Baxter Road. Note mid-slope slope failure.

DRAFT



Photo 16: View in vicinity of 61 & 63 Baxter Road, note scarp at the top of the bank, mid-slope slope failure and scarp at the toe of the bank.



Photo 17: View at 61 Baxter Road. Coir roll installed to slow erosion at the toe of bank .



Photo 18: View in vicinity of southerly changing house at base of stairs between lots 59 & 61. Note toe of slope erosion at the changing house.

DRAFT



Photo 19: View of Coastal Bank in vicinity of Lot 59 Baxter Road. Note toe of slope erosion and apparent slumping on the mid-slope.



Photo 20: View in vicinity of Lot 59. Note toe of slope erosion in foreground.

DRAFT



Photo 21: View of Coastal Bank in vicinity of Lots 55 & 59 Baxter Road. Note toe of slope erosion in foreground.



Photo 22: View in vicinity of Lot 55. Note toe of slope erosion in foreground.

DRAFT



Photo 23: View of Coastal Bank in vicinity of Lot 55 Baxter Road. Note toe of slope erosion in foreground.

DRAFT



Photo 24: View in vicinity of southerly property limit at Lot 55. Note toe of slope erosion in foreground.

Attachment C

Property Owners

DRAFT

Record & Assessed Owners: 41-119 Baxter Road - 2022

Property Address	Map & Parcel	Record Title Holder	Assessed Owner	Recording Information	
				Book/Page	Certificate
41 Baxter Road	49-11	Paul Soros Trst	Paul Soros Trst	1378/171	
45 Baxter Road	49-13	Jeffrey P & Peter Soros Trst	Jeffrey P & Peter Soros Trst	1273/138	
47 Baxter Road	49-14	Jeffrey P & Peter Soros Trst	Jeffrey P & Peter Soros Trst	1273/140	
49 Baxter Road	49-15	Jeanne Richmond Dickinson	Jeanne Richmond Dickinson		C14907
51B Baxter Road	49-16	Fifty One Baxter Rd LLC	Fifty One Baxter Rd LLC		C23122
51A Baxter Road	49-16.1	Fifty One Baxter Rd LLC	Fifty One Baxter Rd LLC		C23122
53 Baxter Road	49-17	Stephen W. Kidder, Trst etal	Stephen W. Kidder, Trst etal		C23030
55 Baxter Road	49-18	Stephen W. Kidder, Trst etal	Stephen W. Kidder, Trst etal	1148/288	
59 Baxter Road	49-20	Kevin F. Dale, Trustee of 59 Canopache Nominee Trust	Kevin F. Dale, Trustee of 59 Canopache Nominee Trust		C19072
61 Baxter Road	49-21	Ann R. Healey, Trustee of the Mayflower QPRT	Ann R. Healey, Trustee of the Mayflower QPRT	1325/277	
63 Baxter Road	49-22	Elizabeth Singer, Trustee of the 64 Baxter Road Realty Trust	Elizabeth Singer, Trustee of the 64 Baxter Road Realty Trust		C19844
65 Baxter Road	49-23	Thomas Tuttle & Sharmila Tuttle	Thomas Tuttle & Sharmila Tuttle	1200/102	
67 Baxter Road	49-24	Morning Light LLC, Margaret Hearst manager	Morning Light LLC, Margaret Hearst manager	845/269	
69 Baxter Road	49-25	Richard & Marianne L. Moscicki	Richard & Marianne L. Moscicki	1294/117	
71 Baxter Road	49-26.1	William F. Honey & Michelle D. Honey	William F. Honey & Michelle D. Honey		C21251
73 Baxter Road	49-27	Bruce Thompson & Mary Thompson	Bruce Thompson & Mary Thompson	1744/135	
75 Baxter Road	49-30	Pablo Hernandez	Pablo Hernandez	1852/108	
77 Baxter Road	49-31	Joshua Posner and Eileen Rudden	Joshua C. Posner and Eileen M. Rudden		C17538
79 Baxter Road	49-32	Helmut F. Weymar & Caroline S. Weymar	F. Helmut Weymar & Caroline S. Weymar		C12804
81 Baxter Road	49-33	William D. & Deborah Futter Cohan	William D. & Deborah Futter Cohan		C23689
83 Baxter Road	49-34	Marie Dostalier and Richard Touchette	Marie Dostalier and Richard Touchette		C23698
85 Baxter Road	49-35	Siasconset Preservation Fund, Inc. - Joshua Posner President	Siasconset Preservation Fund, Inc. - Joshua Posner President		C26035
87 Baxter Road	49-8	Siasconset Preservation Fund, Inc. - Joshua Posner President	Siasconset Preservation Fund, Inc. - Joshua Posner President	1832/47	
91 Baxter Road	48-22	Daniel L. Korengold, Trustee of D&M Baxter Road Nominee Trust	Daniel L. Korengold, Trustee of D&M Baxter Road Nominee Trust	1352/45	
93 Baxter Road	48-21	Charles and Miglena Fotopoulos	Charles and Miglena Fotopoulos	1848/176	
97 Baxter Road	48-19	Charles and Miglena Fotopoulos	Charles and Miglena Fotopoulos		C28644
99 Baxter Road	48-18	Siasconset Preservation Fund, Inc. - Joshua Posner President	Siasconset Preservation Fund, Inc. - Joshua Posner President		C20681
101 Baxter Road	48-17	Sea Forever LLC - Joseph Henry Miller IV, manager	Sea Forever LLC - Joseph Henry Miller IV, manager	1786/306	
105 Baxter Road	48-15	Marilee B. Matteson, as Trustee of Marilee Brill Matteson Nominee Trust	Marilee B. Matteson, as Trustee of Marilee Brill Matteson Nominee Trust		C25689
107 Baxter Road	48-14.1	Whitney A. Gifford, Trustee of S.C. Nominee Trust	Hannah J. Gretz, Trustee of S.G. Nominee Trust	1285/217	
107A Baxter Road	48-14	Whitney A. Gifford, Trustee of S.G. Nominee Trust	Whitney A. Gifford, Trustee of S.G. Nominee Trust	647/191	
109 Baxter Road	48-12	Justine Mascioli Kenney, Trustee of Frederick P. Mascioli Living Trust	Justine Mascioli Kenney, Trustee of Frederick P. Mascioli Living Trust		C26159
113 Baxter Road	48-11	Loretta Yoder and Kyle L. Latshaw	Loretta Yoder and Kyle L. Latshaw	925/147	
115 Baxter Rd	48-10	Scott Kelley	Scott Kelley	1701/107	
117 Baxter Rd	48-9	Scott Kelley	Scott Kelley	1701/201	
119 Baxter Rd	48-7	Sconset Trust, Inc. - Elliot Gewirtz President	Sconset Trust, Inc. - Elliot Gewirtz President		C18718
Sconset Bluff	49-9	Town of Nantucket	Town of Nantucket	102/119	
Sconset Bluff	48-6	Town of Nantucket	Town of Nantucket	185/52	
Sconset Bluff	48-8	Town of Nantucket	Town of Nantucket		C1702
Sconset Bluff	48-5	Sconset Trust, Inc. - Elliot Gewirtz President	Sconset Trust, Inc. - Elliot Gewirtz President		

DRAFT

Assent to SBPF Notice of Intent

The undersigned, as the property owners of record for the property located at 41 Baxter Road, Nantucket, Massachusetts, assent to the filing for the Notice of Intent (NOI) dated _____ by the Siasconset Beach Preservation Fund, Inc (SBPF) with the Nantucket Conservation Commission for an expansion and alteration of the Baxter Road and Sconset Bluff Storm Damage Prevention Project, which includes our property in the project area.

For my title, see Book 1378, Page 171 recorded at the Nantucket Registry of Deeds.

This assent authorizes SBPF to file the NOI but does not waive or grant any other rights or assume any liabilities or obligations related thereto. No work is authorized. However, permission is granted for the reasonable entry only to our land for inspection, survey, and other information gathering purposes related to the NOI.

Dated _____

_____
Name: Paul Soros, Trustee of
Soros Paul Trust

DRAFT

Assent to SBPF Notice of Intent

The undersigned, as the property owners of record for the property located at 45 Baxter Road, Nantucket, Massachusetts, assent to the filing for the Notice of Intent (NOI) dated _____ by the Siasconset Beach Preservation Fund, Inc (SBPF) with the Nantucket Conservation Commission for an expansion and alteration of the Baxter Road and Sconset Bluff Storm Damage Prevention Project, which includes our property in the project area.

For my title, see Book 1273, Page 138 recorded at the Nantucket Registry of Deeds.

This assent authorizes SBPF to file the NOI but does not waive or grant any other rights or assume any liabilities or obligations related thereto. No work is authorized. However, permission is granted for the reasonable entry only to our land for inspection, survey, and other information gathering purposes related to the NOI.

Dated _____

_____
Name: Jeffrey Soros, Trustee of
Soros Jeffrey P & Peter Trust

DRAFT

Assent to SBPF Notice of Intent

The undersigned, as the property owners of record for the property located at 47 Baxter Road, Nantucket, Massachusetts, assent to the filing for the Notice of Intent (NOI) dated _____ by the Siasconset Beach Preservation Fund, Inc (SBPF) with the Nantucket Conservation Commission for an expansion and alteration of the Baxter Road and Sconset Bluff Storm Damage Prevention Project, which includes our property in the project area.

For my title, see Book 1273, Page 140 recorded at the Nantucket Registry of Deeds.

This assent authorizes SBPF to file the NOI but does not waive or grant any other rights or assume any liabilities or obligations related thereto. No work is authorized. However, permission is granted for the reasonable entry only to our land for inspection, survey, and other information gathering purposes related to the NOI.

Dated _____

_____
Name: Jeffrey Soros, Trustee of
Soros Jeffrey P & Peter Trust

DRAFT

Assent to SBPF Notice of Intent

The undersigned, as the property owners of record for the property located at 49 Baxter Road, Nantucket, Massachusetts, assent to the filing for the Notice of Intent (NOI) dated _____ by the Siasconset Beach Preservation Fund, Inc (SBPF) with the Nantucket Conservation Commission for an expansion and alteration of the Baxter Road and Sconset Bluff Storm Damage Prevention Project, which includes our property in the project area.

For my title, see Certificate of Title 14907 registered at the Nantucket Registry District for the Land Court.

This assent authorizes SBPF to file the NOI but does not waive or grant any other rights or assume any liabilities or obligations related thereto. No work is authorized. However, permission is granted for the reasonable entry only to our land for inspection, survey, and other information gathering purposes related to the NOI.

Dated _____

_____
Name: Jeanne Richmond Dickinson

DRAFT

Assent to SBPF Notice of Intent

The undersigned, as the property owners of record for the property located at 51 Baxter Road, Nantucket, Massachusetts, assent to the filing for the Notice of Intent (NOI) dated _____ by the Siasconset Beach Preservation Fund, Inc (SBPF) with the Nantucket Conservation Commission for an expansion and alteration of the Baxter Road and Sconset Bluff Storm Damage Prevention Project, which includes our property in the project area.

For my title, see Certificate of Title 23122 registered at the Nantucket Registry District for the Land Court.

This assent authorizes SBPF to file the NOI but does not waive or grant any other rights or assume any liabilities or obligations related thereto. No work is authorized. However, permission is granted for the reasonable entry only to our land for inspection, survey, and other information gathering purposes related to the NOI.

Dated _____

Fifty One Baxter Rd LLC

_____

Name: Henry J. Gailliot

DRAFT

Assent to SBPF Notice of Intent

The undersigned, as the property owners of record for the property located at 53 Baxter Road, Nantucket, Massachusetts, assent to the filing for the Notice of Intent (NOI) dated _____ by the Siasconset Beach Preservation Fund, Inc (SBPF) with the Nantucket Conservation Commission for an expansion and alteration of the Baxter Road and Sconset Bluff Storm Damage Prevention Project, which includes our property in the project area.

For my title, see Certificate of Title 23030 registered at the Nantucket Registry District for the Land Court.

This assent authorizes SBPF to file the NOI but does not waive or grant any other rights or assume any liabilities or obligations related thereto. No work is authorized. However, permission is granted for the reasonable entry only to our land for inspection, survey, and other information gathering purposes related to the NOI.

Dated _____

_____
Name: Stephen Kidder
Kidder Stephen W. Trust et. al.

DRAFT

Assent to SBPF Notice of Intent

The undersigned, as the property owners of record for the property located at 55 Baxter Road, Nantucket, Massachusetts, assent to the filing for the Notice of Intent (NOI) dated _____ by the Siasconset Beach Preservation Fund, Inc (SBPF) with the Nantucket Conservation Commission for an expansion and alteration of the Baxter Road and Sconset Bluff Storm Damage Prevention Project, which includes our property in the project area.

For my title, see Book 1148, Page 288 recorded at the Nantucket Registry of Deeds.

This assent authorizes SBPF to file the NOI but does not waive or grant any other rights or assume any liabilities or obligations related thereto. No work is authorized. However, permission is granted for the reasonable entry only to our land for inspection, survey, and other information gathering purposes related to the NOI.

Dated _____

_____
Name: Stephen Kidder
Kidder Stephen W. Trust et. al.

DRAFT

Assent to SBPF Notice of Intent

The undersigned, as the property owners of record for the property located at 59 Baxter Road, Nantucket, Massachusetts, assent to the filing for the Notice of Intent (NOI) dated _____ by the Siasconset Beach Preservation Fund, Inc (SBPF) with the Nantucket Conservation Commission for an expansion and alteration of the Baxter Road and Sconset Bluff Storm Damage Prevention Project, which includes our property in the project area.

For my title, see Certificate of Title 19072 registered at the Nantucket Registry District for the Land Court.

This assent authorizes SBPF to file the NOI but does not waive or grant any other rights or assume any liabilities or obligations related thereto. No work is authorized. However, permission is granted for the reasonable entry only to our land for inspection, survey, and other information gathering purposes related to the NOI.

Dated _____

_____
Name: Kevin F. Dale, Trustee of 59 Canopache Nominee Trust

DRAFT

Assent to SBPF Notice of Intent

The undersigned, as the property owners of record for the property located at 61 Baxter Road, Nantucket, Massachusetts, assent to the filing for the Notice of Intent (NOI) dated _____ by the Siasconset Beach Preservation Fund, Inc (SBPF) with the Nantucket Conservation Commission for an expansion and alteration of the Baxter Road and Sconset Bluff Storm Damage Prevention Project, which includes our property in the project area.

For my title, see Book 1325, Page 227 recorded at the Nantucket Registry of Deeds.

This assent authorizes SBPF to file the NOI but does not waive or grant any other rights or assume any liabilities or obligations related thereto. No work is authorized. However, permission is granted for the reasonable entry only to our land for inspection, survey, and other information gathering purposes related to the NOI.

Dated _____

_____
Name: Ann R Healey, Trustee of
61 Mayflower Qualified Personal Residence Trust

DRAFT

Assent to SBPF Notice of Intent

The undersigned, as the property owners of record for the property located at 63 Baxter Road, Nantucket, Massachusetts, assent to the filing for the Notice of Intent (NOI) dated _____ by the Siasconset Beach Preservation Fund, Inc (SBPF) with the Nantucket Conservation Commission for an expansion and alteration of the Baxter Road and Sconset Bluff Storm Damage Prevention Project, which includes our property in the project area.

For my title, see Certificate of Title 19844 registered at the Nantucket Registry District for the Land Court.

This assent authorizes SBPF to file the NOI but does not waive or grant any other rights or assume any liabilities or obligations related thereto. No work is authorized. However, permission is granted for the reasonable entry only to our land for inspection, survey, and other information gathering purposes related to the NOI.

Dated _____

_____
Name: Elizabeth Singer

DRAFT

Assent to SBPF Notice of Intent

The undersigned, as the property owners of record for the property located at 65 Baxter Road, Nantucket, Massachusetts, assent to the filing for the Notice of Intent (NOI) dated _____ by the Siasconset Beach Preservation Fund, Inc (SBPF) with the Nantucket Conservation Commission for an expansion and alteration of the Baxter Road and Sconset Bluff Storm Damage Prevention Project, which includes our property in the project area.

For my title, see Book 1200, Page 102 recorded at the Nantucket Registry of Deeds.

This assent authorizes SBPF to file the NOI but does not waive or grant any other rights or assume any liabilities or obligations related thereto. No work is authorized. However, permission is granted for the reasonable entry only to our land for inspection, survey, and other information gathering purposes related to the NOI.

Dated _____

_____
Name: Thomas Tuttle

_____
Name: Sharmila Tuttle

DRAFT

Assent to SBPF Notice of Intent

The undersigned, as the property owners of record for the property located at 67 Baxter Road, Nantucket, Massachusetts, assent to the filing for the Notice of Intent (NOI) dated _____ by the Siasconset Beach Preservation Fund, Inc (SBPF) with the Nantucket Conservation Commission for an expansion and alteration of the Baxter Road and Sconset Bluff Storm Damage Prevention Project, which includes our property in the project area.

For my title, see Book 845, Page 269 recorded at the Nantucket Registry of Deeds.

This assent authorizes SBPF to file the NOI but does not waive or grant any other rights or assume any liabilities or obligations related thereto. No work is authorized. However, permission is granted for the reasonable entry only to our land for inspection, survey, and other information gathering purposes related to the NOI.

Dated _____

Morning Light LLC

_____

Name: Margaret C. Hearst, manager

DRAFT

Assent to SBPF Notice of Intent

The undersigned, as the property owners of record for the property located at 69 Baxter Road, Nantucket, Massachusetts, assent to the filing for the Notice of Intent (NOI) dated _____ by the Siasconset Beach Preservation Fund, Inc (SBPF) with the Nantucket Conservation Commission for an expansion and alteration of the Baxter Road and Sconset Bluff Storm Damage Prevention Project, which includes our property in the project area.

For my title, see Book 1294, Page 117 recorded at the Nantucket Registry of Deeds.

This assent authorizes SBPF to file the NOI but does not waive or grant any other rights or assume any liabilities or obligations related thereto. No work is authorized. However, permission is granted for the reasonable entry only to our land for inspection, survey, and other information gathering purposes related to the NOI.

Dated _____

_____
Name: Richard Moscicki

_____
Name: Marianne L. Moscicki

DRAFT

Assent to SBPF Notice of Intent

The undersigned, as the property owners of record for the property located at 71 Baxter Road, Nantucket, Massachusetts, assent to the filing for the Notice of Intent (NOI) dated _____ by the Siasconset Beach Preservation Fund, Inc (SBPF) with the Nantucket Conservation Commission for an expansion and alteration of the Baxter Road and Sconset Bluff Storm Damage Prevention Project, which includes our property in the project area.

For my title, see Certificate of Title 21251 registered at the Nantucket Registry District for the Land Court.

This assent authorizes SBPF to file the NOI but does not waive or grant any other rights or assume any liabilities or obligations related thereto. No work is authorized. However, permission is granted for the reasonable entry only to our land for inspection, survey, and other information gathering purposes related to the NOI.

Dated _____

_____
Name: William F. Honey

_____
Name: Michelle D. Honey

DRAFT

Assent to SBPF Notice of Intent

The undersigned, as the property owners of record for the property located at 73 Baxter Road, Nantucket, Massachusetts, assent to the filing for the Notice of Intent (NOI) dated _____ by the Siasconset Beach Preservation Fund, Inc (SBPF) with the Nantucket Conservation Commission for an expansion and alteration of the Baxter Road and Sconset Bluff Storm Damage Prevention Project, which includes our property in the project area.

For my title, see Book 1744, Page 135 recorded at the Nantucket Registry of Deeds.

This assent authorizes SBPF to file the NOI but does not waive or grant any other rights or assume any liabilities or obligations related thereto. No work is authorized. However, permission is granted for the reasonable entry only to our land for inspection, survey, and other information gathering purposes related to the NOI.

Dated _____

_____
Name: Bruce Thompson

_____
Name: Mary Thompson

DRAFT

Assent to SBPF Notice of Intent

The undersigned, as the property owners of record for the property located at 75 Baxter Road, Nantucket, Massachusetts, assent to the filing for the Notice of Intent (NOI) dated _____ by the Siasconset Beach Preservation Fund, Inc (SBPF) with the Nantucket Conservation Commission for an expansion and alteration of the Baxter Road and Sconset Bluff Storm Damage Prevention Project, which includes our property in the project area.

For my title, see Book 1852, Page 108 recorded at the Nantucket Registry of Deeds.

This assent authorizes SBPF to file the NOI but does not waive or grant any other rights or assume any liabilities or obligations related thereto. No work is authorized. However, permission is granted for the reasonable entry only to our land for inspection, survey, and other information gathering purposes related to the NOI.

Dated _____

_____

Name: Pablo Hernandez

DRAFT

Assent to SBPF Notice of Intent

The undersigned, as the property owners of record for the property located at 77 Baxter Road, Nantucket, Massachusetts, assent to the filing for the Notice of Intent (NOI) dated _____ by the Siasconset Beach Preservation Fund, Inc (SBPF) with the Nantucket Conservation Commission for an expansion and alteration of the Baxter Road and Sconset Bluff Storm Damage Prevention Project, which includes our property in the project area.

For my title, see Certificate of Title 17538 registered at the Nantucket Registry District for the Land Court.

This assent authorizes SBPF to file the NOI but does not waive or grant any other rights or assume any liabilities or obligations related thereto. No work is authorized. However, permission is granted for the reasonable entry only to our land for inspection, survey, and other information gathering purposes related to the NOI.

Dated _____

_____
Name: Joshua Posner

_____
Name: Eileen Rudden

DRAFT

Assent to SBPF Notice of Intent

The undersigned, as the property owners of record for the property located at 79 Baxter Road, Nantucket, Massachusetts, assent to the filing for the Notice of Intent (NOI) dated _____ by the Siasconset Beach Preservation Fund, Inc (SBPF) with the Nantucket Conservation Commission for an expansion and alteration of the Baxter Road and Sconset Bluff Storm Damage Prevention Project, which includes our property in the project area.

For my title, see Certificate of Title 12804 registered at the Nantucket Registry District for the Land Court.

This assent authorizes SBPF to file the NOI but does not waive or grant any other rights or assume any liabilities or obligations related thereto. No work is authorized. However, permission is granted for the reasonable entry only to our land for inspection, survey, and other information gathering purposes related to the NOI.

Dated _____

_____
Name: F. Helmut Weymar

_____
Name: Caroline S. Weymar

DRAFT

Assent to SBPF Notice of Intent

The undersigned, as the property owners of record for the property located at 81 Baxter Road, Nantucket, Massachusetts, assent to the filing for the Notice of Intent (NOI) dated _____ by the Siasconset Beach Preservation Fund, Inc (SBPF) with the Nantucket Conservation Commission for an expansion and alteration of the Baxter Road and Sconset Bluff Storm Damage Prevention Project, which includes our property in the project area.

For my title, see Certificate of Title 23689 registered at the Nantucket Registry District for the Land Court.

This assent authorizes SBPF to file the NOI but does not waive or grant any other rights or assume any liabilities or obligations related thereto. No work is authorized. However, permission is granted for the reasonable entry only to our land for inspection, survey, and other information gathering purposes related to the NOI.

Dated _____

_____
Name: William D. Cohan

_____
Name: Deborah F. Cohan

DRAFT

Assent to SBPF Notice of Intent

The undersigned, as the property owners of record for the property located at 83 Baxter Road, Nantucket, Massachusetts, assent to the filing for the Notice of Intent (NOI) dated _____ by the Siasconset Beach Preservation Fund, Inc (SBPF) with the Nantucket Conservation Commission for an expansion and alteration of the Baxter Road and Sconset Bluff Storm Damage Prevention Project, which includes our property in the project area.

For my title, see Certificate of Title 23698 registered at the Nantucket Registry District for the Land Court.

This assent authorizes SBPF to file the NOI but does not waive or grant any other rights or assume any liabilities or obligations related thereto. No work is authorized. However, permission is granted for the reasonable entry only to our land for inspection, survey, and other information gathering purposes related to the NOI.

Dated _____

_____
Name: Marie Dostalier

_____
Name: Richard Touchette

DRAFT

Assent to SBPF Notice of Intent

The undersigned, as the property owners of record for the property located at 85 Baxter Road, Nantucket, Massachusetts, assent to the filing for the Notice of Intent (NOI) dated _____ by the Siasconset Beach Preservation Fund, Inc (SBPF) with the Nantucket Conservation Commission for an expansion and alteration of the Baxter Road and Sconset Bluff Storm Damage Prevention Project, which includes our property in the project area.

For my title, see Certificate of Title 26035 registered at the Nantucket Registry District for the Land Court.

This assent authorizes SBPF to file the NOI but does not waive or grant any other rights or assume any liabilities or obligations related thereto. No work is authorized. However, permission is granted for the reasonable entry only to our land for inspection, survey, and other information gathering purposes related to the NOI.

Dated _____

Siasconset Beach Preservation Fund, Inc.

_____

Name: Joshua Posner, President

DRAFT

Assent to SBPF Notice of Intent

The undersigned, as the property owners of record for the property located at 87 Baxter Road, Nantucket, Massachusetts, assent to the filing for the Notice of Intent (NOI) dated _____ by the Siasconset Beach Preservation Fund, Inc (SBPF) with the Nantucket Conservation Commission for an expansion and alteration of the Baxter Road and Sconset Bluff Storm Damage Prevention Project, which includes our property in the project area.

For my title, see Book 1832, Page 47 recorded at the Nantucket Registry of Deeds.

This assent authorizes SBPF to file the NOI but does not waive or grant any other rights or assume any liabilities or obligations related thereto. No work is authorized. However, permission is granted for the reasonable entry only to our land for inspection, survey, and other information gathering purposes related to the NOI.

Dated _____

Siasconset Beach Preservation Fund, Inc.

_____
Name: Joshua Posner, President

DRAFT

Assent to SBPF Notice of Intent

The undersigned, as the property owners of record for the property located at 91 Baxter Road, Nantucket, Massachusetts, assent to the filing for the Notice of Intent (NOI) dated _____ by the Siasconset Beach Preservation Fund, Inc (SBPF) with the Nantucket Conservation Commission for an expansion and alteration of the Baxter Road and Sconset Bluff Storm Damage Prevention Project, which includes our property in the project area.

For my title, see Book 1352, Page 45 recorded at the Nantucket Registry of Deeds.

This assent authorizes SBPF to file the NOI but does not waive or grant any other rights or assume any liabilities or obligations related thereto. No work is authorized. However, permission is granted for the reasonable entry only to our land for inspection, survey, and other information gathering purposes related to the NOI.

Dated _____

_____
Name: Daniel L. Korengold, as Trustee
Of D&M Baxter Road Nominee Trust

DRAFT

Assent to SBPF Notice of Intent

The undersigned, as the property owners of record for the property located at 93 Baxter Road, Nantucket, Massachusetts, assent to the filing for the Notice of Intent (NOI) dated _____ by the Siasconset Beach Preservation Fund, Inc (SBPF) with the Nantucket Conservation Commission for an expansion and alteration of the Baxter Road and Sconset Bluff Storm Damage Prevention Project, which includes our property in the project area.

For my title, see Book 1848, Page 176 recorded at the Nantucket Registry of Deeds.

This assent authorizes SBPF to file the NOI but does not waive or grant any other rights or assume any liabilities or obligations related thereto. No work is authorized. However, permission is granted for the reasonable entry only to our land for inspection, survey, and other information gathering purposes related to the NOI.

Dated _____

_____
Name: Charles Fotopoulos

_____
Name: Miglena Fotopoulos

DRAFT

Assent to SBPF Notice of Intent

The undersigned, as the property owners of record for the property located at 97 Baxter Road, Nantucket, Massachusetts, assent to the filing for the Notice of Intent (NOI) dated _____ by the Siasconset Beach Preservation Fund, Inc (SBPF) with the Nantucket Conservation Commission for an expansion and alteration of the Baxter Road and Sconset Bluff Storm Damage Prevention Project, which includes our property in the project area.

For my title, see Certificate of title 28644 registered at the Nantucket Registry District for the Land Court.

This assent authorizes SBPF to file the NOI but does not waive or grant any other rights or assume any liabilities or obligations related thereto. No work is authorized. However, permission is granted for the reasonable entry only to our land for inspection, survey, and other information gathering purposes related to the NOI.

Dated _____

_____
Name: Charles Fotopoulos

_____
Name: Miglena Fotopoulos

DRAFT

Assent to SBPF Notice of Intent

The undersigned, as the property owners of record for the property located at 99 Baxter Road, Nantucket, Massachusetts, assent to the filing for the Notice of Intent (NOI) dated _____ by the Siasconset Beach Preservation Fund, Inc (SBPF) with the Nantucket Conservation Commission for an expansion and alteration of the Baxter Road and Sconset Bluff Storm Damage Prevention Project, which includes our property in the project area.

For my title, see Book 1832, Page 47 recorded at the Nantucket Registry of Deeds.

This assent authorizes SBPF to file the NOI but does not waive or grant any other rights or assume any liabilities or obligations related thereto. No work is authorized. However, permission is granted for the reasonable entry only to our land for inspection, survey, and other information gathering purposes related to the NOI.

Dated _____

Siasconset Beach Preservation Fund, Inc.

_____
Name: Joshua Posner, President

DRAFT

Assent to SBPF Notice of Intent

The undersigned, as the property owners of record for the property located at 101 Baxter Road, Nantucket, Massachusetts, assent to the filing for the Notice of Intent (NOI) dated _____ by the Siasconset Beach Preservation Fund, Inc (SBPF) with the Nantucket Conservation Commission for an expansion and alteration of the Baxter Road and Sconset Bluff Storm Damage Prevention Project, which includes our property in the project area.

For my title, see Book 1786, Page 306 recorded at the Nantucket Registry of Deeds.

This assent authorizes SBPF to file the NOI but does not waive or grant any other rights or assume any liabilities or obligations related thereto. No work is authorized. However, permission is granted for the reasonable entry only to our land for inspection, survey, and other information gathering purposes related to the NOI.

Dated _____

Sea Forever LLC

_____

Name: Joseph Henry Miller IV, Manager

DRAFT

Assent to SBPF Notice of Intent

The undersigned, as the property owners of record for the property located at 105 Baxter Road, Nantucket, Massachusetts, assent to the filing for the Notice of Intent (NOI) dated _____ by the Siasconset Beach Preservation Fund, Inc (SBPF) with the Nantucket Conservation Commission for an expansion and alteration of the Baxter Road and Sconset Bluff Storm Damage Prevention Project, which includes our property in the project area.

For my title, see Certificate of Title 25689 recorded at the Nantucket Registry District for the Land Court.

This assent authorizes SBPF to file the NOI but does not waive or grant any other rights or assume any liabilities or obligations related thereto. No work is authorized. However, permission is granted for the reasonable entry only to our land for inspection, survey, and other information gathering purposes related to the NOI.

Dated _____

_____
Name: Marilee B. Matteson, Trustee of
Marliee Brill Matteson Nominee Trust

DRAFT

Assent to SBPF Notice of Intent

The undersigned, as the property owners of record for the property located at 107A Baxter Road, Nantucket, Massachusetts, assent to the filing for the Notice of Intent (NOI) dated _____ by the Siasconset Beach Preservation Fund, Inc (SBPF) with the Nantucket Conservation Commission for an expansion and alteration of the Baxter Road and Sconset Bluff Storm Damage Prevention Project, which includes our property in the project area.

For my title, see Book 1285, Page 217 recorded at the Nantucket Registry of Deeds.

This assent authorizes SBPF to file the NOI but does not waive or grant any other rights or assume any liabilities or obligations related thereto. No work is authorized. However, permission is granted for the reasonable entry only to our land for inspection, survey, and other information gathering purposes related to the NOI.

Dated _____

_____
Name: Whitney A. Gifford, Trustee of
Whitney A. Gifford Nominee Trust

DRAFT

Assent to SBPF Notice of Intent

The undersigned, as the property owners of record for the property located at 107 Baxter Road, Nantucket, Massachusetts, assent to the filing for the Notice of Intent (NOI) dated _____ by the Siasconset Beach Preservation Fund, Inc (SBPF) with the Nantucket Conservation Commission for an expansion and alteration of the Baxter Road and Sconset Bluff Storm Damage Prevention Project, which includes our property in the project area.

For my title, see Book 1285, Page 217 recorded at the Nantucket Registry of Deeds.

This assent authorizes SBPF to file the NOI but does not waive or grant any other rights or assume any liabilities or obligations related thereto. No work is authorized. However, permission is granted for the reasonable entry only to our land for inspection, survey, and other information gathering purposes related to the NOI.

Dated _____

_____
Name: Whitney A. Gifford, Trustee
Whitney A. Gifford Trust

DRAFT

Assent to SBPF Notice of Intent

The undersigned, as the property owners of record for the property located at 109 Baxter Road, Nantucket, Massachusetts, assent to the filing for the Notice of Intent (NOI) dated _____ by the Siasconset Beach Preservation Fund, Inc (SBPF) with the Nantucket Conservation Commission for an expansion and alteration of the Baxter Road and Sconset Bluff Storm Damage Prevention Project, which includes our property in the project area.

For my title, see Certificate of title 26295 registered at the Nantucket Registry District for the Land Court.

This assent authorizes SBPF to file the NOI but does not waive or grant any other rights or assume any liabilities or obligations related thereto. No work is authorized. However, permission is granted for the reasonable entry only to our land for inspection, survey, and other information gathering purposes related to the NOI.

Dated _____

_____
Name: Justine Mascioli Kenney, Trustee of
Frederick P. Mascioli Living Trust

DRAFT

Assent to SBPF Notice of Intent

The undersigned, as the property owners of record for the property located at 113 Baxter Road, Nantucket, Massachusetts, assent to the filing for the Notice of Intent (NOI) dated _____ by the Siasconset Beach Preservation Fund, Inc (SBPF) with the Nantucket Conservation Commission for an expansion and alteration of the Baxter Road and Sconset Bluff Storm Damage Prevention Project, which includes our property in the project area.

For my title, see Book 925, Page 147 recorded at the Nantucket Registry of Deeds.

This assent authorizes SBPF to file the NOI but does not waive or grant any other rights or assume any liabilities or obligations related thereto. No work is authorized. However, permission is granted for the reasonable entry only to our land for inspection, survey, and other information gathering purposes related to the NOI.

Dated _____

_____
Name: Kyle L. Latshaw

_____
Name: Loretta A. Yoder

DRAFT

Assent to SBPF Notice of Intent

The undersigned, as the property owners of record for the property located at 115 Baxter Road, Nantucket, Massachusetts, assent to the filing for the Notice of Intent (NOI) dated _____ by the Siasconset Beach Preservation Fund, Inc (SBPF) with the Nantucket Conservation Commission for an expansion and alteration of the Baxter Road and Sconset Bluff Storm Damage Prevention Project, which includes our property in the project area.

For my title, see Book 1701, Page 107 recorded at the Nantucket Registry of Deeds.

This assent authorizes SBPF to file the NOI but does not waive or grant any other rights or assume any liabilities or obligations related thereto. No work is authorized. However, permission is granted for the reasonable entry only to our land for inspection, survey, and other information gathering purposes related to the NOI.

Dated _____

_____
Name: Scott Kelley

DRAFT

Assent to SBPF Notice of Intent

The undersigned, as the property owners of record for the property located at 117 Baxter Road, Nantucket, Massachusetts, assent to the filing for the Notice of Intent (NOI) dated _____ by the Siasconset Beach Preservation Fund, Inc (SBPF) with the Nantucket Conservation Commission for an expansion and alteration of the Baxter Road and Sconset Bluff Storm Damage Prevention Project, which includes our property in the project area.

For my title, see Book 1701, Page 201 recorded at the Nantucket Registry of Deeds.

This assent authorizes SBPF to file the NOI but does not waive or grant any other rights or assume any liabilities or obligations related thereto. No work is authorized. However, permission is granted for the reasonable entry only to our land for inspection, survey, and other information gathering purposes related to the NOI.

Dated _____

_____
Name: Scott Kelley

DRAFT

Assent to SBPF Notice of Intent

The undersigned, as the property owners of record for the property located at 119 Baxter Road, Nantucket, Massachusetts, assent to the filing for the Notice of Intent (NOI) dated _____ by the Siasconset Beach Preservation Fund, Inc (SBPF) with the Nantucket Conservation Commission for an expansion and alteration of the Baxter Road and Sconset Bluff Storm Damage Prevention Project, which includes our property in the project area.

For my title, see Certificate of Title 18718 registered at the Nantucket Registry District for the Land Court.

This assent authorizes SBPF to file the NOI but does not waive or grant any other rights or assume any liabilities or obligations related thereto. No work is authorized. However, permission is granted for the reasonable entry only to our land for inspection, survey, and other information gathering purposes related to the NOI.

Dated _____

Sconset Trust, Inc.

_____

Name: Elliot Gewirtz, President

DRAFT

SBPF NOI Assent

The undersigned, as the prope1iy owner of record for the property located at Tax Parcels 48-6, 48-8, and 49-9 at the Sconset Bluff, Nantucket, Massachusetts, assent to the filing for the Notice of Intent (NOI) dated _____ by the Siasconset Beach Preservation Fund Inc (SBPF) with the Nantucket Conservation Commission for an expansion and alteration of the Baxter Road and Sconset Bluff Storm Damage Prevention Project, which includes my property in the project area.

For my title, see Book 102 Page 119, Book 185 Page 52, and Certificate of Title 1702.

This assent authorizes SBPF to file the NOI but does not waive or grant any other rights or assume any liabilities or obligations related thereto. No work is authorized. However, permission is granted for the reasonable entry only to my land for inspection, survey, and other information gathering purposes related to the NOI.

This assent is expressly conditioned upon SBPF's completion of engineered plans necessary for a "shovel-ready" project providing alternative access to Baxter Road, by September 30, 2018, along the route which is defined in the existing alternative access agreement between the Town, SBPF, and the involved property owners, and satisfactory review and approval of the plans by the Select Board, at SBPF's expense. Should this condition not be satisfied, this assent shall be deemed null and void upon declaration by the Select Board in its sole discretion.

Dated_____

_____
Name: C. Elizabeth Gibson
Title: Town Manager

DRAFT

Attachment D

Abutters List

DRAFT

TOWN OF NANTUCKET

CONSERVATION COMMISSION

LIST OF PARTIES IN INTEREST IN THE MATTER OF THE PETITION OF:

PROPERTY OWNER..... Various

MAILING ADDRESS..... Various

PROPERTY LOCATION..... 41,45,47,49,51,53,55,59,61,63,67,69,71,73,75,77,81,83,85,87, 91,93,97,99,101,105,107,107A,109,113,115,117,119 BAXTER RD, AND SCONSET BLUFF

ASSESSOR MAP/PARCEL..... Various

SUBMITTED BY..... Epsilon Associates

SEE ATTACHED PAGES

DRAFT

I certify the foregoing is a list of persons who are owners of land directly abutting the property on which the proposed activity will occur (the locus), owners of land separated a distance of one hundred feet or less from the locus by a public or private street or way or stream and owners of land separated a distance of three hundred feet or less from the locus by a body of water, all as they appear on the most recent applicable tax list.

November 1, 2022

DATE

ASSESSOR'S OFFICE
TOWN OF NANTUCKET

Abutters Listing

MBLU	Lot	Lot Cut	Owner Full Name	Co-Owner Full Name	Address Line 1	City	State	Zip	Location
48	5		SCONSET TRUST INC		PO BOX 821	SIASCONSET	MA	02564	122 BAXTER RD
48	6		NANTUCKET TOWN OF		16 BROAD ST	NANTUCKET	MA	02554	PLAINFIELD
48	7		SCONSET TRUST INC		PO BOX 821	SIASCONSET	MA	02564	119 BAXTER RD
48	8		NANTUCKET TOWN OF		16 BROAD ST	NANTUCKET	MA	02554	SCONSET BLUFF
48	9		KELLEY SCOTT		1005 BAYSHORE BLVD	TAMPA	FL	33606	117 BAXTER RD
48	10		KELLEY SCOTT		1005 BAYSHORE BLVD	TAMPA	FL	33606	115 BAXTER RD
48	11		LATSHAW KYLE L & YODER LORETTA A		P O BOX 3	NANTUCKET	MA	02584	113 BAXTER RD
48	12		KENNEY JUSTINE M TR		3506 RODMAN STREET N W	WASHNIGTON	DC	20008	109 BAXTER RD
48	14		GIFFORD WHITNEY A TRST	C/O GRETZ HANNAH J	940 EAST DEERPATH RD	LAKE FOREST	IL	60045	107A BAXTER RD
48	14	1	GIFFORD WHITNEY A TRST	C/O JUDY JOHN A	119 EVERGREEN AVENUE	ELMHURST	IL	60126	107 BAXTER RD
48	15		M LEE LLC		291 LLWYDS LN	VERO BEACH	FL	32963	105 BAXTER RD
48	17		SEA FOREVER LLC		33 LOCKWOOD DR	CHARLESTON	SC	29401	101 BAXTER RD
48	18		SIASCONSET BEACH PRESERVATION TRUST		PO BOX 2279	NANTUCKET	MA	02584	99 BAXTER RD
48	19		FOTOPOLOUS CHARLES & MIGLENA		C/O 294 SOUTH MAIN ST	ANDOVER	MA	01810	97 BAXTER RD
48	21		FOTOPOULOS CHARLES & MIGLENA		294 MAIN ST	ANDOVER	MA	01810	93 BAXTER RD
48	22		KORENGOLD DANIEL L TRST	D & M BAXTER ROAD NOM TRUST	101 E MELROSE STREET	CHEVY CHASE	MD	20815	91 BAXTER RD
48	23		KORENGOLD DANIEL L TRST	D & M BAXTER ROAD NOM TRUST	101 EAST MELROSE STREET	CHEVY CHASE	MD	20815	92 BAXTER RD
48	33		MACKAY RICHARD S & LINDA M TRS		PO BOX 567	HANOVER	NH	03755	120 BAXTER RD
48	34		DELPIDIO LOUIS TR	116 BAXTER ROAD BEACH HOUSE TR	275 TREMONT ST	BOSTON	MA	02116	116 BAXTER RD
48	35		JK BAXTER LLC		5506 NORMANDY PL	BALTIMORE	MD	21210	114 BAXTER RD
48	36		112 BAXTER ROAD LLC		5108 BLAKE RD SOUTH	EDINA	MN	55436	112 BAXTER RD
48	37		RYAN PATRICK T TRST	RYAN NANTUCKET REALTY TR	28 MASCONOMO ST	MANCHESTER	MA	01944	110 BAXTER RD
48	38	1	GIFFORD WHITNEY A TRST	C/O JUDY JOHN H	119 EVERGREEN AVE	ELMHURST	IL	60126	108 BAXTER RD
48	39		M LEE LLC		291 LLWYDS LN	VERO BEACH	FL	32963	106 BAXTER RD
48	40		SEA FOREVER LLC		C/O JOE H MILLER IV	CHARLESTON	SC	29401	104 BAXTER RD

DRAFT

48	42		BAILEY DAVID S & DOROTHY O		250 FIRST AV UNIT 805	CHARLESTOWN	MA	02129	100 BAXTER RD
48	43		PISCHDOTCHIAN CYNTHIA		99 POND AVE UNIT 801	BROOKLINE	MA	02445	98 BAXTER RD
48	44		WEBB ALEXANDER III & LAURA R		91 PINCKNEY ST	BOSTON	MA	02114	96 BAXTER RD
49	5		BAXTER REDEV LLC		5 CANFIELD CROSSING	NORWALK	CT	06850	90 BAXTER RD
49	8		SIASCONSET BEACH PRESERVATION FUND INC		PO BOX 2279	NANTUCKET	MA	02584	87 BAXTER RD
49	9		NANTUCKET TOWN OF		16 BROAD ST	NANTUCKET	MA	02554	SCONSET BLUFF
49	10		SAUL ANDREW M & DENISE N		PO BOX [illegible]5	KATONAH	NY	10536	39 BAXTER RD
49	13		SOROS JEFFREY P & PETER TRST	C/O P SOROS INVESTMENTS	250 WEST 55TH S[illegible]EET [illegible] FL	NEW YORK	NY	10019	45 BAXTER RD
49	14		SOROS JEFFREY P & PETER TRST	C/O P SOROS INVESTMENTS	250 WEST 55[illegible] STRE[illegible] 26TH FL	NEW YORK	NY	10019	47 BAXTER RD
49	15		JEANNE RICHMOND DICKINSON		180 EAST 7[illegible]H STREET APT. 4A	NEW YORK	NY	10021	49 BAXTER RD
49	16		FIFTY ONE BAXTER RD LLC	C/O HENRY J GAILLIOT	[illegible]08 SC[illegible]ENLEY RD	PITTSBURGH	PA	15217	51 BAXTER RD
49	17		KIDDER STEPHEN W TRST ETAL	C/O A & B REALTY TRUST	THE PILO[illegible]OUSE LEWIS WHARF	BOSTON	MA	02110	53 BAXTER RD
49	18		KIDDER STEPHEN W TRST ETAL	THE PILOT HOUSE	LEW[illegible]WHARF	BOSTON	MA	02110	55 BAXTER RD
49	20		DALE KEVIN F TRUSTEE	SUITE 120	1[illegible]RANK[illegible]IN F[illegible]Y BLDG 910	SAN MATEO	CA	94403	59 BAXTER RD
49	21		HEALEY ANN R TRST ETAL	C/O VAUGHTER E[illegible]G	3[illegible] CHESAPEAKE ST NW	WASHINGTON	DC	20008-2915	61 BAXTER RD
49	22		SINGER ELIZABETH		674 AD HOC RD	GREAT FALLS	VA	22066	63 BAXTER RD
49	23		TUTTLE THOMAS & SHARMILA		[illegible]337 WEST 22ND STREET	NEW YORK	NY	10011	65 BAXTER RD
49	24		MORNING LIGHT LLC		3100 PACIFIC AVE	SAN FRANCISCO	CA	94115	67 BAXTER RD
49	25		MOSCICKI RICHARD & MARIANNE L		105 HUNTINGTON RD	NEWTON	MA	02458	69 BAXTER RD
49	26	1	HONEY WILLIAM F & MICHELLE D ETAL		115 4TH STREET SE	WASHINGTON	DC	20003	71 BAXTER RD
49	27		THOMPSON BRUCE & MARY		PO BOX 7500	SIASCONSET	MA	2564	73 BAXTER RD
49	30		HERNANDEZ PABLO ETAL		6155 PIPING ROCK LN	HOUSTON	TX	77057	75 BAXTER RD
49	31		POSNER JOSHUA & RUDDEN EILEEN		32 ARLINGTON ST	CAMBRIDGE	MA	02140	77 BAXTER RD
49	32		WEYMAR F HELMUT & CAROLINE S		79 BAXTER RD	SIASCONSET	MA	02564	79 BAXTER RD
49	33		COHAN WILLIAM D & DEBORAH F		180 RIVERSIDE DR	NEW YORK	NY	10024	81 BAXTER RD
49	34		83 BAXTER RD REALTY LLC		115 WESFORD ST	LOWELL	MA	O1851	83 BAXTER RD
49	35		SIASCONSET BEACH PRESV FUND INC		PO BOX 2279	NANTUCKET	MA	02584	85 BAXTER RD

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49	36		86 BAXTER ROAD LLC		175 METRO CENTER BLVD STE 7	WARWICK	RI	02886	86 BAXTER RD
49	37		BUTLER KAREN T TRST	EIGHTY FOUR BAXTER NOM TRUST	PO BOX 2608	BONITA SPRINGS	FL	34134	84 BAXTER RD
49	38		PASQUARELLI JAMES R ETAL		43 SOUTHGATE AVENUE	ANNAPOLIS	MD	21401	82A BAXTER RD
49	39		ATKINSON MARK D & AMY ANDRES C TRST		2299 PACIFIC AVENUE #82	SAN FRANCISCO	CA	94115	82 BAXTER RD
49	40		POSNER JOSHUA & RUDDEN EILEEN		32 ARLINGTON ST	CAMBRIDGE	MA	02140	80 BAXTER RD
49	41		GERSKY PETER & SARAH		15 PARK [illegible]	WOODBURY	CT	06798	78 BAXTER RD
49	42		GOD BLESS DAD LLC		807 OXFORD [illegible]EST	VILLANOVA	PA	19085	76 BAXTER RD
49	43		GOD BLESS DAD LLC		807 OXFO[illegible] CR[illegible]ST	VILLANOVA	PA	19085	3 BAYBERRY SIAS LN
49	44		MCAULIFFE MARY E		310 CHARLES A[illegible]EXANDER C[illegible]	ALEXANDRIA	VA	22301	72 BAXTER RD
49	45		WILNER SUSAN & GOLDEN DAVID TRS	GOLDEN/WILNER LIVING TRUST	367[illegible] JACKSON STREET	SAN FRANCISCO	CA	94118	70 BAXTER RD
49	47		ROSEMOOR LLC		[illegible] VARADO RD	BERKELEY	CA	94075	68 BAXTER RD
49	50		NANTUCKET TOWN OF		[illegible] BROAD ST	NANTUCKET	MA	02554	BAXTER RD
49	51		SINGER ELIZABETH		674 A[illegible]HOC RD	GREAT FALLS	VA	22066	64 BAXTER RD
49	52		HEALEY ANN R TRST ETAL	C/O VAUGHTER ELINOR G	612 C[illegible]ESA[illegible]AKE ST NW	WASHINGTON	DC	20008-2915	62 BAXTER RD
49	54		ABCET LLC	C/O HOSTETTE[illegible]AMOS	THE [illegible]LOT HOUSE LEWIS WF	BOSTON	MA	02110	58 BAXTER RD
49	57		52 BAXTER ROAD LLC		415 SAINT CLAIR AVE	GROSSE POINTE	MI	48230	52 BAXTER RD
49	58	2	SAMUELS JOHN M & DIANE V TRS		270 OLD CHURCH RD	GREENWICH	CT	06830	50B BAXTER RD
49	58	3	SAMUELS JOHN M & DIANE V TRS		270 OLD CHURCH RD	GREENWICH	CT	06830	50A BAXTER RD
49	59		48 BAXTER ROAD LLC		270 OLD CHURCH RD	GREENWICH	CT	06830	48 BAXTER RD
49	60		WOODYATT DARCY SCOTT TRST	C/O WILLI[illegible]T SCOTT	12 MILL LN	HINGHAM	MA	02043	46 BAXTER RD
49	61		HEATON MICHAEL M & CAROL E		81 WOOD PLACE	ROSWELL	GA	30075	44 BAXTER RD
49	62		COHEN STEVEN L TRST	C/O P SO[illegible]S I[illegible]ESTMENTS	250 WEST 55TH STREET 26TH FL	NEW YORK	NY	10019	42 BAXTER RD
49	63		BARR NICOLE S		PO BOX 317	SIASCONSET	MA	02564	40 BAXTER RD
4923	3		RYAN PATRICK T		150 BRAZILIAN AVE	PALM BEACH	FL	33480	36 BAXTER RD
Count:	**76**								

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Attachment E

Coastal Engineering Structure Protection Qualifications

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Jurisdictional Review for Protecting Existing Structures at:
41 Baxter Road

Following are the criteria reviewed to document that lots on the east side of Baxter Road are eligible for construction of a coastal engineering structure to protect existing structures on this lot, or infrastructure proximate to this lot, from loss or damage by coastal floodwaters. This is based on criteria established for Coastal Bank in the Nantucket Wetlands Protection Bylaw Regulations (Section 2.05) and the Massachusetts Wetland Protection Regulations (310 CMR 10.30). The information presented below is summarized in Table 1. Summary of Qualifications to Protect the Coastal Bank from Erosion with a CES.

<u>Criteria establishing eligibility:</u>

Coastal Dune fronting Lot: Y

The Coastal Dune along the Sconset shoreline has been eroding from north to south starting in the 1970's. The dune fronting this parcel has reformed at the base of the slope.

Coastal Bank fronting the lot is eroding: Y

The toe of Coastal Bank and narrow fringing dune is subject to erosion.

Coastal Bank Supports Vegetation: Y

The Coastal Bank is vegetated along the entire shoreline.

On vacant lots, Coastal Bank significant to protect Public Infrastructure[1]: N

This lot contains a house. Distance of house from top of Coastal Bank is 40 feet. This house setback does meet the imminent hazard criteria (40-foot setback) established for houses on Baxter Road.

Lot supports a pre-1978 building[2]: N

There has been a house on this lot since 1979.

Have Structures been improved since 2005[2]: N

The review of building permits issued for this lot is as follows:

<u>2019</u>: Sliding door replacement
<u>2007</u>: Tear down and rebuild chimney
<u>2004</u>: Construct a 18x20 ft porch
<u>1999</u>: Renovate bedroom to create new bathroom 60 SF
<u>1994</u>: Addition of garage with studio above. 460 SF first floor, 450 SF second floor.

Was the house previously relocated landward on lot ("planned retreat"): Y

The house was moved in 1998.

There is adequate space on this lot to re-locate the house further landward from the top of Coastal Bank: N

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Required Sand Contribution Volume:

Site specific Coastal Bank Retreat Rate: 0 ft /year (Reach 5)

Time period of retreat calculations by Epsilon Associates, Inc.: 14 years

Annual volume required to compensate for protected Coastal Bank (cy/lf) (based on reach): NA

Proposed Starting Volume in Template: 22 cy/lf

Years of annual contribution available in template (i.e., 22/ annual volume)[3]: NA

Notes:

1. Pursuant to the By-Law Regulations a CES is allowed to protect public infrastructure from loss or damage by floodwaters [Bylaw Section 2.5].
2. Pursuant to Bylaw Regulations and state regulations, a CES is allows to protect structures / buildings constructed adjacent to the Coastal Bank before August 1978 (date when state regulations became effective). Bylaw Regulations prevent use of CES to protect pre-1978 structures that were substantially improved. The Substantially improved clause was added to the Bylaw Regulation in 2005. Substantial Improvement is defined in the Bylaw Regulations as cumulative expansion of habitable space greater than twenty percent (20%). [1.02]
3. Calculated by dividing the full template volume (22 cy/lf) by the required annual sand contribution (varies cy/lf/yr)

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Jurisdictional Review for Protecting Existing Structures at:
45 Baxter Road

Following are the criteria reviewed to document that lots on the east side of Baxter Road are eligible for construction of a coastal engineering structure to protect existing structures on this lot, or infrastructure proximate to this lot, from loss or damage by coastal floodwaters. This is based on criteria established for Coastal Bank in the Nantucket Wetlands Protection Bylaw Regulations (Section 2.05) and the Massachusetts Wetland Protection Regulations (310 CMR 10.30). The information presented below is summarized in Table 1. Summary of Qualifications to Protect the Coastal Bank from Erosion with a CES.

Criteria establishing eligibility:

Coastal Dune fronting Lot: Y

The Coastal Dune along the Sconset shoreline has been eroding from north to south starting in the 1970's. The dune fronting this parcel has reformed at the base of the slope.

Coastal Bank fronting the lot is eroding: Y

The toe of Coastal Bank and narrow fringing dune is subject to erosion.

Coastal Bank Supports Vegetation: Y

The Coastal Bank is vegetated along the entire zone.

On vacant lots, Coastal Bank significant to protect Public Infrastructure[1]: N

This lot contains a house. Distance of house from top of Coastal Bank is 48 feet. This house setback does not meet the minimal criteria (40-foot setback) established for houses on Baxter Road.

Lot supports a pre-1978 building[2]: Y

There has been a house on this lot since 1930.

Have Structures been improved since 2005[2]: Y

The review of building permits issued for this lot is as follows:

2020: Replace bay window
2015: Replace bay window
2009: Renovate dwelling, add new finished cellar and cellar access
2008: Add stone window wells, add cellar access, add roof over stoop, reduce size of second floor bay, widow revisions, partial roof of slate and standing seam copper
2007: Roof and garage door revisions
2006: Demolish interior plaster, wallboard, and partitions
2006: Add full cellar, 2,276 SF bathroom, powder room, laundry, office, mechanical, and study. First floor: remove and rebuild existing south and west wig 698 SF sunroom entry, attached garage. Second floor: remove and rebuild existing south and west wing 655 SF master bedroom, 3 bedrooms. Renovate kitchen and all baths. Revised to add windows and roof changes.

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2005: Remove and replace pergola and deck, south gambrel, west wing and foundation. 2,272 SF on first floor, 1,932 SF on second floor.
1994: Repair and replace beach stairs
1988: Construct addition and deck, First floor 664 SF, second floor 648 SF.
1984: Replace 320 SF sun porch

Was the house previously relocated landward on lot ("planned retreat"): N

There is adequate space on this lot to re-locate the house further landward from the top of Coastal Bank: N

Required Sand Contribution Volume:

Site specific Coastal Bank Retreat Rate: 0 ft /year (Reach 5)

Time period of retreat calculations by Epsilon Associates, Inc.: 14 years

Annual volume required to compensate for protected Coastal Bank (cy/lf) (based on reach): NA

Proposed Starting Volume in Template: 22 cy/lf

Years of annual contribution available in template (i.e., 22/ annual volume)[3]: NA

Notes:

1. Pursuant to the By-Law Regulations, CES is allowed to protect public infrastructure from loss or damage by floodwaters [Bylaw Section 2.5].
2. Pursuant to Bylaw Regulations and state regulations, a CES is allows to protect structures / buildings constructed adjacent to the Coastal Bank before August 1978 (date when state regulations became effective). Bylaw Regulations prevent use of CES to protect pre-1978 structures that were substantially improved. The Substantially improved clause was added to the Bylaw regulation in 2005. Substantial Improvement is defined in the Bylaw Regulations as cumulative expansion of habitable space greater than twenty percent (20%). [1.02]
3. Calculated by dividing the full template volume (22 cy/lf) by the required annual sand contribution (varies cy/lf/yr)

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Jurisdictional Review for Protecting Existing Structures at:
47 Baxter Road

Following are the criteria reviewed to document that lots on the east side of Baxter Road are eligible for construction of a coastal engineering structure to protect existing structures on this lot, or infrastructure proximate to this lot, from loss or damage by coastal floodwaters. This is based on criteria established for Coastal Bank in the Nantucket Wetlands Protection Bylaw Regulations (Section 2.05) and the Massachusetts Wetland Protection Regulations (310 CMR 10.30). The information presented below is summarized in Table 1. Summary of Qualifications to Protect the Coastal Bank from Erosion with a CES.

<u>Criteria establishing eligibility:</u>

Coastal Dune fronting Lot: Y

The Coastal Dune along the Sconset shoreline has been eroding from north to south starting in the 1970's. The dune fronting this parcel has reformed at the base of the slope.

Coastal Bank fronting the lot is eroding: Y

The toe of Coastal Bank and narrow fringing dune is subject to erosion.

Coastal Bank Supports Vegetation: **Y**

The Coastal Bank is vegetated along the entire line.

On vacant lots, Coastal Bank significant to protect Public Infrastructure[1]: **N**

This lot contains a house. Distance of house from top of Coastal Bank is 42 feet. This house setback does not meet the minimal criteria (40-foot setback) established for houses on Baxter Road.

Lot supports a pre-1978 building[2]**: Y**

There has been a house on this lot since 1886.

Have Structures been improved since 2005[2]**: N**

The review of building permits issued for this lot is as follows:

<u>1994</u>: Build a stairway down bank to beach
<u>1993</u>: Reshingle roof and sidewall, renovate interior, new windows and doors
<u>1992</u>: Replace foundation, reconstruct porch, reinforce first floor,
<u>1992</u>: Demolish 153 SF shed and build 300 SF open stud garage/storage

Was the house previously relocated landward on lot ("planned retreat"): N

There is adequate space on this lot to re-locate the house further landward from the top of Coastal Bank: N

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Required Sand Contribution Volume:

Site specific Coastal Bank Retreat Rate: 0 ft /year (Reach 5)

Time period of retreat calculations by Epsilon Associates, Inc.: 14 years

Annual volume required to compensate for protected Coastal Bank (cy/lf) (based on reach): NA

Proposed Starting Volume in Template: 22 cy/lf

Years of annual contribution available in template (i.e., 22/ annual volume)[3]: NA

Notes:

1. Pursuant to the By-Law Regulations a CES is allowed to protect public infrastructure from loss or damage by floodwaters [Bylaw Section 2.5].
2. Pursuant to Bylaw Regulations and state regulations a CES is allows to protect structures / buildings constructed adjacent to the Coastal Bank before August 1978 (date when state regulations became effective). Bylaw Regulations prevent use of CES to protect pre-1978 structures that were substantially improved. The Substantially improved clause was added to the bylaw regulations in 2005. Substantial Improvement is defined in the Bylaw Regulations as cumulative expansion of habitable space greater than twenty percent (20%). [1.02]
3. Calculated by dividing the full template volume (22 cy/lf) by the required annual sand contribution (varies cy/lf/yr)

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Jurisdictional Review for Protecting Existing Structures at:
49 Baxter Road

Following are the criteria reviewed to document that lots on the east side of Baxter Road are eligible for construction of a coastal engineering structure to protect existing structures on this lot, or infrastructure proximate to this lot, from loss or damage by coastal floodwaters. This is based on criteria established for Coastal Bank in the Nantucket Wetlands Protection Bylaw Regulations (Section 2.05) and the Massachusetts Wetland Protection Regulations (310 CMR 10.30). The information presented below is summarized in Table 1. Summary of Qualifications to Protect the Coastal Bank from Erosion with a CES.

Criteria establishing eligibility:

Coastal Dune fronting Lot: Y

The Coastal Dune along the Sconset shoreline has been eroding from north to south starting in the 1970's. The dune fronting this parcel has reformed at the base of the slope.

Coastal Bank fronting the lot is eroding: Y

The toe of Coastal Bank and narrow fringing dune is subject to erosion.

Coastal Bank Supports Vegetation: Y

The Coastal Bank is vegetated along the entire line.

On vacant lots, Coastal Bank significant to protect Public Infrastructure[1]: N

This lot contains a house. Distance of house from top of Coastal Bank is 25 feet. This house setback does meet the imminent hazard criteria (40-foot setback) established for houses on Baxter Road.

Lot supports a pre-1978 building[2]: Y

There has been a house on this lot since 1886.

Have Structures been improved since 2005[2]: N

The building department building permit records shows there have been no improvements since 2005. No building permit records were found to be issued for this lot.

Was the house previously relocated landward on lot ("planned retreat"): N

There is adequate space on this lot to re-locate the house further landward from the top of Coastal Bank: N

Required Sand Contribution Volume:

Site specific Coastal Bank Retreat Rate: 0 ft /year (Reach 5)

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Time period of retreat calculations by Epsilon Associates, Inc.: 14 years

Annual volume required to compensate for protected Coastal Bank (cy/lf) (based on reach): NA

Proposed Starting Volume in Template: 22 cy/lf

Years of annual contribution available in template (i.e., 22/ annual volume)[3]: NA

Notes:

1. Pursuant to the By-Law Regulations a CES is allowed to protect public infrastructure from loss or damage by floodwaters [Bylaw Section 2.5].
2. Pursuant to Bylaw Regulations and state regulations, a CES is allowed to protect structures / buildings constructed adjacent to the Coastal Bank before August 1978 (date when state regulations became effective). Bylaw Regulations prevent use of CES to protect pre-1978 structures that were substantially improved. The Substantially improved clause was added to the Bylaw regulation in 2005. Substantial Improvement is defined in the Bylaw Regulations as cumulative expansion of habitative space greater than twenty percent (20%). [1.02]
3. Calculated by dividing the full template volume (22 cy/lf) by the required annual sand contribution (varies cy/lf/yr)

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Jurisdictional Review for Protecting Existing Structures at:
51 Baxter Road

Following are the criteria reviewed to document that lots on the east side of Baxter Road are eligible for construction of a coastal engineering structure to protect existing structures on this lot, or infrastructure proximate to this lot, from loss or damage by coastal floodwaters. This is based on criteria established for Coastal Bank in the Nantucket Wetlands Protection Bylaw Regulations (Section 2.05) and the Massachusetts Wetland Protection Regulations (310 CMR 10.30). The information presented below is summarized in Table 1. Summary of Qualifications to Protect the Coastal Bank from Erosion with a CES.

<u>Criteria establishing eligibility:</u>

Coastal Dune fronting Lot: Y

The Coastal Dune along the Sconset shoreline has been eroding from north to south starting in the 1970's. The dune fronting this parcel has reformed at the base of the slope.

Coastal Bank fronting the lot is eroding: Y

The toe of Coastal Bank and narrow fringing dune is subject to erosion.

Coastal Bank Supports Vegetation: Y

The Coastal Bank is vegetated along the entire shoreline.

On vacant lots, Coastal Bank significant to protect Public Infrastructure[1]: N

This lot contains a house. Distance of house from top of Coastal Bank is 52 feet. This house setback does not meet the minimal criteria (40-foot setback) established for houses on Baxter Road.

Lot supports a pre-1978 building[2]: Y

There has been a house on this lot since 1887.

Have Structures been improved since 2005[2]: Y

The building department building permit records shows there have been no improvements to the main dwelling since 2005. A guest house was constructed in 2009. The review of building permits issued for this lot is as follows:

<u>2011</u>: Remove and replace existing beach stair
<u>2010</u>: reframe porch roof, replace sunroom walls and ceiling
<u>2009</u>: Relocate building on new finished full basement 1,905 SF. Add 225 SF to first floor and renovate 2,025 SF of first floor: new first floor dining room, remove stairs, add first floor chimney mass, remove and relocate interior walls, door and window changes. Renovate 1,349 SF of second floor, rebuild second floor balcony as porch with roof access.
<u>2009</u>: Build a new two story, one bedroom garage. First floor total area including garage 807 SF, living area 547 SF. Second floor total area and living area 283 SF. Full cellar area 446 SF.
<u>2008</u>: 126 SF addition to kitchen and 72 SF bathroom addition

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1997: Renovate two bathrooms
1995: Demolish 200sf garage
1994: Demolish 7'x13' shed
1991: Repair windows, shingle, decking, pantry floor and 8'6"x14' addition to bedroom
1991: Rebuild stairs to beach (void, work not done)

Was the house previously relocated landward on lot ("planned retreat"): Y

The house was moved in 2009.

There is adequate space on this lot to re-locate the house further landward from the top of Coastal Bank: N

Required Sand Contribution Volume:

Site specific Coastal Bank Retreat Rate: 0 ft /year (Reach 5)

Time period of retreat calculations by Epsilon Associates, Inc.: 14 years

Annual volume required to compensate for protected Coastal Bank (cy/lf) (based on reach): NA

Proposed Starting Volume in Template: 22 cy/lf

Years of annual contribution available in template (i.e., 22/ annual volume)[3]: NA

Notes:

1. Pursuant to the By-Law Regulations a CES is allowed to protect public infrastructure from loss or damage by floodwaters [Bylaw Section 2.
2. Pursuant to Bylaw Regulations and state regulations, a CES is allows to protect structures / buildings constructed adjacent to the Coastal Bank before August 1978 (date when state regulations became effective). Bylaw Regulations prevent use of CES to protect pre-1978 structures that were substantially improved. The Substantially improved clause was added to the Bylaw regulation in 2005. Substantial Improvement is defined in the Bylaw Regulations as cumulative expansion of habitable space greater than twenty percent (20%). [1.02]
3. Calculated by dividing the full template volume (22 cy/lf) by the required annual sand contribution (varies cy/lf/yr)

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Jurisdictional Review for Protecting Existing Structures at:
53 Baxter Road

Following are the criteria reviewed to document that lots on the east side of Baxter Road are eligible for construction of a coastal engineering structure to protect existing structures on this lot, or infrastructure proximate to this lot, from loss or damage by coastal floodwaters. This is based on criteria established for Coastal Bank in the Nantucket Wetlands Protection Bylaw Regulations (Section 2.05) and the Massachusetts Wetland Protection Regulations (310 CMR 10.30). The information presented below is summarized in Table 1. Summary of Qualifications to Protect the Coastal Bank from Erosion with a CES.

Criteria establishing eligibility:

Coastal Dune fronting Lot: Y

The Coastal Dune along the Sconset shoreline has been eroding from north to south starting in the 1970's. The dune fronting this parcel has reformed at the base of the slope.

Coastal Bank fronting the lot is eroding: Y

The toe of Coastal Bank and narrow fringing dune is subject to erosion.

Coastal Bank Supports Vegetation: Y

The Coastal Bank is vegetated along the entire shoreline.

On vacant lots, Coastal Bank significant to protect Public Infrastructure[1]: N

This lot contains a house. Distance of house from top of Coastal Bank is 44 feet. This house setback does not meet the minimum criteria (40-foot setback) established for houses on Baxter Road.

Lot supports a pre-1978 building[2]: Y

There has been a house on this lot since 1925.

Have Structures been improved since 2005[2]: Y

The review of building permits issued for this lot is as follows:

2017: Permit for temporary inclement weather cocktail tents
2016: Relocate and alter driveway, move garage and add basement, move dwelling
2014: Replace windows and re-roof
2011: Replace beach stairs
2008: Demo chimney, add windows
2007: Renovate kitchen, office, and bathrooms
2000: Replace windows and doors
1997: Replace and repair chimney
1988: Build 16.5 SF addition
1987: Build 850 SF addition and 14'x6' addition to garage

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Was the house previously relocated landward on lot ("planned retreat"): Y

The house was moved in 2016.

There is adequate space on this lot to re-locate the house further landward from the top of Coastal Bank: N

Required Sand Contribution Volume:

Site specific Coastal Bank Retreat Rate: 0 ft /year (Reach 5)

Time period of retreat calculations by Epsilon Associates, Inc.: 14 years

Annual volume required to compensate for protected Coastal B[illegible] (cy/lf) (based on reach): NA

Proposed Starting Volume in Template: 22 cy/lf

Years of annual contribution available in template (i.e., [illegible]2/[illegible]nual volume)[3]: NA

Notes:

1. Pursuant to the By-Law Regulations a CES is allowed to protect public infrastructure from loss or damage by floodwaters [Bylaw Section 2.5].
2. Pursuant to Bylaw Regulations and state regulations, a CES is allows to protect structures / buildings constructed adjacent to the Coastal Bank before August 1978 (date when state regulations became effective). Bylaw Regulations prevent use of CES to protect pre-1978 structures that were substantially improved. The Substantially improved clause was added to the Bylaw regulation in 2005. Substantial Improvement is defined in the Bylaw Regulations as cumulative expansion of habitable space greater than twenty percent (20%). [1.02]
3. Calculated by dividing the full template volume (22 cy/lf) by the required annual sand contribution (varies cy/lf/yr)

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Jurisdictional Review for Protecting Existing Structures at:
55 Baxter Road

Following are the criteria reviewed to document that lots on the east side of Baxter Road are eligible for construction of a coastal engineering structure to protect existing structures on this lot, or infrastructure proximate to this lot, from loss or damage by coastal floodwaters. This is based on criteria established for Coastal Bank in the Nantucket Wetlands Protection Bylaw Regulations (Section 2.05) and the Massachusetts Wetland Protection Regulations (310 CMR 10.30). The information presented below is summarized in Table 1. Summary of Qualifications to Protect the Coastal Bank from Erosion with a CES.

<u>Criteria establishing eligibility:</u>

Coastal Dune fronting Lot: Y

The Coastal Dune along the Sconset shoreline has been eroding from north to south starting in the 1970's. The dune fronting this parcel has reformed at the base of the slope.

Coastal Bank fronting the lot is eroding: Y

The toe of Coastal Bank and narrow fringing dune is subject to erosion.

Coastal Bank Supports Vegetation: Y

The Coastal Bank is vegetated along the entire shoreline.

On vacant lots, Coastal Bank significant to protect Public Infrastructure[1]: N

This lot contains a house. Distance of house from top of Coastal Bank is 36 feet. This house setback does meet the imminent hazard criteria (40-foot setback) established for houses on Baxter Road.

Lot supports a pre-1978 building[2]: Y

There has been a house on this lot since 1890.

Have Structures been improved since 2005[2]: N

The building department building permit records shows there have been no improvements since 2005. The review of building permits issued for this lot is as follows:

<u>1998</u>: Relocate dwelling on same lot, new finished cellar, renovate remaining two stories – porch.
<u>1973</u>: Addition (library)

Was the house previously relocated landward on lot ("planned retreat"): Y

The house was moved in 1998.

There is adequate space on this lot to re-locate the house further landward from the top of Coastal Bank: N

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Required Sand Contribution Volume:

Site specific Coastal Bank Retreat Rate: 0 ft /year (Reach 5)

Time period of retreat calculations by Epsilon Associates, Inc.: 14 years

Annual volume required to compensate for protected Coastal Bank (cy/lf) (based on reach): NA

Proposed Starting Volume in Template: 22 cy/lf

Years of annual contribution available in template (i.e., 22/ annual volume)[3]: NA

Notes:

1. Pursuant to the By-Law Regulations a CES is allowed to protect pu[illegible] infrastructure from loss or damage by floodwaters [Bylaw Section 2.5].
2. Pursuant to Bylaw Regulations and state regulations, a CES is allows[illegible] protect structures / buildings constructed adjacent to the Coastal Bank before August 1[illegible]8 (date when state regulations became effective). Bylaw Regulations prevent use of CES to protect pre-19[illegible] stru[illegible]ures that were substantially improved. The Substantially improved clause was added to the Bylaw regu[illegible]n in 2005. Substantial Improvement is defined in the Bylaw Regulations as cumulative expansio[illegible] habitable s[illegible]ce greater than twenty percent (20%). [1.02]
3. Calculated by dividing the full template volume [illegible]2 cy/[illegible] by the required annual sand contribution (varies cy/lf/yr)

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Jurisdictional Review for Protecting Existing Structures at:
59 Baxter Road

Following are the criteria reviewed to document that lots on the east side of Baxter Road are eligible for construction of a coastal engineering structure to protect existing structures on this lot, or infrastructure proximate to this lot, from loss or damage by coastal floodwaters. This is based on criteria established for Coastal Bank in the Nantucket Wetlands Protection Bylaw Regulations (Section 2.05) and the Massachusetts Wetland Protection Regulations (310 CMR 10.30). The information presented below is summarized in Table 1. Summary of Qualifications to Protect the Coastal Bank from Erosion with a CES.

Criteria establishing eligibility:

Coastal Dune fronting Lot: Y

The Coastal Dune along the Sconset shoreline has been eroding from north to south starting in the 1970's. The dune fronting this parcel has reformed at the base of the slope.

Coastal Bank fronting the lot is eroding: Y

The toe of the coastal bank experiences erosion. The coastal dune fronting the bank is in transition. It was eroded away during the March 2018 storms, but had reformed by Winter 2020.

Coastal Bank Supports Vegetation: Y

The Coastal Bank is vegetated.

On vacant lots, Coastal Bank significant to protect Public Infrastructure[1]: N

This lot contains a house. Distance of house from top of Coastal Bank is 65 feet. This house setback does not meet the imminent hazard criteria (40-foot setback) established for houses on Baxter Road.

Lot supports a pre-1978 Building[2]: Y

There has been a house on this lot since 1905/1923.

Have Structures been improved since 2005[2]: Y

The building department building permit records shows there have been improvements since 2005. The review of building permits issued for this lot is as follows:

2011: Raise dwelling and place on new full foundations. Finish the basement bedroom, two bathrooms, living room; renovate 495 sf, add 97 sf first floor; renovate 153 sf second floor.
2003: Replace fixtures and tile in three bathrooms.
1999: Remove enclosure on 166 sf porch; add steps and door.
1996: Build garage/workshop.

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1991: Rebuild front porch, alter windows and doors, reside and reroof and amendment to add 121 sf porch enclosure, bedroom, and bathroom.
1991: Rebuild shed.

Was the house previously relocated landward on lot ("planned retreat"): N

There is adequate space on this lot to re-locate the house further landward from the top of Coastal Bank: N

Required Sand Contribution Volume:

Site specific Coastal Bank Retreat Rate: 0 ft /year (Reach 5)

Time period of retreat calculations by Epsilon Associates, Inc.: 1[illegible] years

Annual volume required to compensate for protected Coastal Bank (cy/lf) (based on reach): NA

Proposed Starting Volume in Template: 22 cy/lf

Years of annual contribution available in template (i.e., 22/ annual volume)[3]: NA

Time period of retreat calculations by Epsilon Associates, Inc.: 14 years

Annual volume required to compensate for protected Coastal Bank (cy/lf) (based on reach): 2.3 cy/lf

Proposed Starting Volume in Template: 22 cy/lf

Years of annual contribution available in template (i.e., 22/ annual volume)[3]: 9.6 years

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Notes:

1. Pursuant to the By-Law Regulations a CES is allowed to protect public infrastructure from loss or damage by floodwaters [Bylaw Section 2.5].
2. Pursuant to Bylaw Regulations and state regulations, a CES is allows to protect structures / buildings constructed adjacent to the Coastal Bank before August 1978 (date when state regulations became effective). Bylaw Regulations prevent use of CES to protect pre-1978 structures that were substantially improved. The Substantially improved clause was added to the Bylaw regulation in 2005. Substantial Improvement is defined in the Bylaw Regulations as cumulative expansion of habitable space greater than twenty percent (20%). [1.02]
3. Calculated by dividing the full template volume (22 cy/lf) by the required annual sand contribution (varies cy/lf/yr)

Jurisdictional Review for Protecting Existing Structures at:
61 Baxter Road

Following are the criteria reviewed to document that lots on the east side of Baxter Road are eligible for construction of a coastal engineering structure to protect existing structures on this lot, or infrastructure proximate to this lot, from loss or damage by coastal floodwaters. This is based on criteria established for Coastal Bank in the Nantucket Wetlands Protection Bylaw Regulations (Section 2.05) and the Massachusetts Wetland Protection Regulations (310 CMR 10.30). The information presented below is summarized in Table 1. Summary of Qualifications to Protect the Coastal Bank from Erosion with a CES.

Criteria establishing eligibility:

Coastal Dune fronting Lot: N

The Coastal Dune along the Sconset shoreline has been eroding from north to south starting in the 1970's. The dune fronting this parcel has been permanently lost.

Coastal Bank fronting the lot is eroding: Y

The Coastal Bank fronting this lot is vegetated and is comprised of erodible soils. Lower fifth of the slope lacks vegetation and shows signs of erosion despite being protected by a coir terrace.

Coastal Bank Supports Vegetation:

The Coastal Bank is partially vegetated. Vegetation is present along the upper four fifths of the slope, with the lower portion lacking vegetation at the toe of slope.

On vacant lots, Coastal Bank significant to protect Public Infrastructure[1]: N

This lot contains a house. Distance of house from top of Coastal Bank is 68 feet. This house setback does not meet the imminent hazard criteria (40-foot setback) established for houses on Baxter Road.

Lot supports a pre-1978 Building[2]: Y

There has been a house on this lot since 1893/1894.

Have Structures been improved since 2005[2]: N

The building department building permit records shows there have been no improvements since 2005. The review of building permits issued for this lot is as follows:

2004: Repair existing porch decking and joists. Reroof 2800 sf, trim of single dwelling, and amendment to re-shingle renovate kit, laundry and 4 baths. Foundation repairs. First floor girder replacement, insulate and add heat. Upgrade plumbing and electrical.

Was the house previously relocated landward on lot ("planned retreat"): N

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There is adequate space on this lot to re-locate the house further landward from the top of Coastal Bank: N

Required Sand Contribution Volume:

Site specific Coastal Bank Retreat Rate: 1.0 ft /year (Reach 4)

Time period of retreat calculations by Epsilon Associates, Inc.: 14 years

Annual volume required to compensate for protected Coastal Bank (cy/lf) (based on reach): 2.3 cy/lf

Proposed Starting Volume in Template: 22 cy/lf

Years of annual contribution available in template (i.e., 22/ annual volume)[3]: 9.6 years

Notes:

1. Pursuant to the By-Law Regulations a CES is allowed to protect public infrastructure from loss or damage by floodwaters [Bylaw Section 2.5].
2. Pursuant to Bylaw Regulations and state regulations a CES is allows to protect structures / buildings constructed adjacent to the Coastal Bank before August 1978 (date when state regulations became effective). Bylaw Regulations prevent use of CES to protect pre-1978 structures that were substantially improved. The Substantial Improvement clause was added to the Bylaw regulation in 2005. Substantial Improvement is defined in the Bylaw Regulations as cumulative expansion of habitable space greater than twenty percent (20%). [1.02]
3. Calculated by dividing the full template volume (22 cy/lf) by the required annual sand contribution (varies cy/lf/yr)

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Jurisdictional Review for Protecting Existing Structures at:
63 Baxter Road

Following are the criteria reviewed to document that lots on the east side of Baxter Road are eligible for construction of a coastal engineering structure to protect existing structures on this lot, or infrastructure proximate to this lot, from loss or damage by coastal floodwaters. This is based on criteria established for Coastal Bank in the Nantucket Wetlands Protection Bylaw Regulations (Section 2.05) and the Massachusetts Wetland Protection Regulations (310 CMR 10.30). The information presented below is summarized in Table 1. Summary of Qualifications to Protect the Coastal Bank from Erosion with a CES.

<u>Criteria establishing eligibility:</u>

Coastal Dune fronting Lot: N

The Coastal Dune along the Sconset shoreline has been eroding from north to south starting in the 1970's. The dune fronting this parcel has been permanently lost.

Coastal Bank fronting the lot is eroding: Y

The Coastal Bank fronting this lot is partially vegetated. The northerly third of the slope shows exposed soil with crescent shaped exposed soils across the entire slope extending about one quarter up the slope. These are signs of sloe failure. The toe is subject to erosion.

Coastal Bank Supports Vegetation: P

The Coastal Bank is partially vegetated. Vegetation is present along the southerly half two thirds of the slope, while the northerly third of the slope supports very sparse vegetated to the top of the slope. Crescent shaped areas lacking vegetation are signs of slope failure. The toe of slope lacks vegetation.

On vacant lots, Coastal Bank significant to protect Public Infrastructure[1]: N

This lot contains a house. Distance of house from top of Coastal Bank is 34 feet. This house setback does meet the imminent hazard criteria (40-foot setback) established for houses on Baxter Road.

Lot supports a pre-1978 Building[2]: Y

There has been a house on this lot since 1890/1892.

Have Structures been improved since 2005[2]: Y

The building department building permit records shows there have been improvements since 2005. The review of building permits issued for this lot is as follows:

<u>2007</u>: Garage and store room.
<u>2005</u>: Demolish shed.
<u>2004</u>: Construct second dwelling.

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2004: Demolish guest house/garage.
2002: Renovate existing dwelling unit approximately 3000 sf. Reroof and shingle walls.

Was the house previously relocated landward on lot ("planned retreat"): N

There is adequate space on this lot to re-locate the house further landward from the top of Coastal Bank: Y

Required Sand Contribution Volume:

Site specific Coastal Bank Retreat Rate: 1.0 ft /year (Reach 4)

Time period of retreat calculations by Epsilon Associates, Inc.: 14 years

Annual volume required to compensate for protected Coastal Bank (cy/lf) (based on reach): 2.3 cy/lf

Proposed Starting Volume in Template: 22 cy/lf

Years of annual contribution available in template (i.e. 22/ annual volume)[3]: 9.6 years

Notes:

1. Pursuant to the By-Law Regulations a CES is allowed to protect public infrastructure from loss or damage by floodwaters [Bylaw Section 2.3].
2. Pursuant to Bylaw Regulations and state regulations, a CES is allows to protect structures / buildings constructed adjacent to the Coastal Bank before August 1978 (date when state regulations became effective). Bylaw Regulations prevent use of CES to protect pre-1978 structures that were substantially improved. The Substantially improved clause was added to the Bylaw regulation in 2005. Substantial Improvement is defined in the Bylaw Regulations as cumulative expansion of habitable space greater than twenty percent (20%). [1.02]
3. Calculated by dividing the template volume (22 cy/lf) by the required annual sand contribution (varies cy/lf/yr)

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Jurisdictional Review for Protecting Existing Structures at:
65 Baxter Road

Following are the criteria reviewed to document that lots on the east side of Baxter Road are eligible for construction of a coastal engineering structure to protect existing structures on this lot, or infrastructure proximate to this lot, from loss or damage by coastal floodwaters. This is based on criteria established for Coastal Bank in the Nantucket Wetlands Protection Bylaw Regulations (Section 2.05) and the Massachusetts Wetland Protection Regulations (310 CMR 10.30). The information presented below is summarized in Table 1. Summary of Qualifications to Protect the Coastal Bank from Erosion with a CES.

<u>Criteria establishing eligibility:</u>

Coastal Dune fronting Lot: N

The Coastal Dune along the Sconset shoreline has been eroding from north to south starting in the 1970's. The dune fronting this parcel has been permanently lost.

Coastal Bank fronting the lot is eroding: Y

The Coastal Bank fronting this lot is partially vegetated and is comprised of erodible soils. The crescent shaped zones of exposed soils on the southerly half of the slopes are signs of slope failure. The entire toe of slope is subject to erosion.

Coastal Bank Supports Vegetation:

The Coastal Bank is partially vegetated. In extensive areas, about southerly two thirds of the slope faces is sparsely vegetated with crescent shaped areas of exposed soils. The toe lack vegetation.

On vacant lots, Coastal Bank significant to protect Public Infrastructure[1]: N

This lot contains a house. The distance of house from top of Coastal Bank is 37 feet. This house setback does meet the imminent hazard criteria (40-foot setback) established for houses on Baxter Road.

Lot supports a pre-1978 Building[2]: Y

There has been a house on this lot since 15.

Have Structures been improved since 2005[2]: N

The building department building permit records shows there have been no improvements since 2005. The review of building permits issued for this lot is as follows:

<u>2001</u>: Renovate garage.
<u>2001</u>: Renovate shed.
<u>2001</u>: Raise house to provide cellar. Completely renovate three-story single-family dwelling.

Was the house previously relocated landward on lot ("planned retreat"): N

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There is adequate space on this lot to re-locate the house further landward from the top of Coastal Bank: Y

There is approximately 60 feet of landward space on the lot.

Required Sand Contribution Volume:

Site specific Coastal Bank Retreat Rate: 1.0 ft /year (Reach 4)

Time period of retreat calculations by Epsilon Associates, Inc.: 14 years

Annual volume required to compensate for protected Coastal Bank (cy/lf) (based on reach): 2.3 cy/lf

Proposed Starting Volume in Template: 22 cy/lf

Years of annual contribution available in template (i.e., 22/ annual volume)[3]: 9.6 years

Notes:

1. Pursuant to the By-Law Regulations a CES is allowed to protect public infrastructure from loss or damage by floodwaters [Bylaw Section 2.5].
2. Pursuant to Bylaw Regulations and state regulations, a CES is allows to protect structures / buildings constructed adjacent to the Coastal Bank before August 1978 (date when state regulations became effective). Bylaw Regulations prevent use of CES to protect pre-1978 structures that were substantially improved. The Substantially Improved clause was added to the Bylaw regulation in 2005. Substantial Improvement is defined in the Bylaw Regulations as cumulative expansion of habitable space greater than twenty percent (20%). [1.02]
3. Calculated by dividing the full template volume (22 cy/lf) by the required annual sand contribution (varies cy/lf/yr)

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Jurisdictional Review for Protecting Existing Structures at:
67 Baxter Road

Following are the criteria reviewed to document that lots on the east side of Baxter Road are eligible for construction of a coastal engineering structure to protect existing structures on this lot, or infrastructure proximate to this lot, from loss or damage by coastal floodwaters. This is based on criteria established for Coastal Bank in the Nantucket Wetlands Protection Bylaw Regulations (Section 2.05) and the Massachusetts Wetland Protection Regulations (310 CMR 10.30). The information presented below is summarized in Table 1. Summary of Qualifications to Protect the Coastal Bank from Erosion with a CES.

<u>Criteria establishing eligibility:</u>

Coastal Dune fronting Lot: N

The Coastal Dune along the Sconset shoreline has been eroding from north to south starting in the 1970's. The dune fronting this parcel has been permanently lost.

Coastal Bank fronting the lot is eroding: Y

The Coastal Bank fronting this lot is comprised of erodible soils with the northerly third of the slope comprised of exposed soils. The toe of slope is subject to erosion.

Coastal Bank Supports Vegetation: **P**

The Coastal Bank is partially vegetated. The northern portion of the bank is primarily denuded while vegetation is present along the southern portion of the bank.

On vacant lots, Coastal Bank significant to protect Public Infrastructure[1]: **N**

This lot contains a house. Distance of house from top of Coastal Bank is 51 feet. This house setback does not meet the imminent hazard criteria (40-foot setback) established for houses on Baxter Road.

Lot supports a pre-1978 Building[2]**: Y**

There has been a house on this lot since 1930.

Have Structures been improved since 2005[2]**: N**

The building department building permit records shows there have been no improvements since 2005. The review of building permits issued for this lot is as follows:

<u>2002</u>: Renovation of relocated dwelling, two new decks – sewer; add porch and second floor deck.
<u>2002</u>: Repairs and re-shingling side and roof, red fire proof shingles on roof (note- it looks like this is permit is for the garage).
<u>2001</u>: Relocate dwelling on the same lot for setback compliance.
<u>1979</u>: Construct 5'6" x 9' and 5'6" x 16' additions.

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Was the house previously relocated landward on lot ("planned retreat"): Y

The house was moved in 2001.

There is adequate space on this lot to re-locate the house further landward from the top of Coastal Bank: Y

There is approximately 53 feet of landward space on the lot.

Required Sand Contribution Volume:

Site specific Coastal Bank Retreat Rate: 1.0 ft /year (Reach 4)

Time period of retreat calculations by Epsilon Associates, Inc.: 14 years

Annual volume required to compensate for protected Coastal Bank (cy/lf) (based on reach): 2.3 cy/lf

Proposed Starting Volume in Template: 22 cy/lf

Years of annual contribution available in template (i.e., 22 / annual volume)[3]: 9.6 years

Notes:

1. Pursuant to the By-Law Regulations a CES is allowed to protect public infrastructure from loss or damage by floodwaters [Bylaw Section 2.5].
2. Pursuant to Bylaw Regulations and state regulations, a CES is allows to protect structures / buildings constructed adjacent to the Coastal Bank before August 1978 (date when state regulations became effective). Bylaw Regulations prevent use of CES to protect pre-1978 structures that were substantially improved. The Substantially improved clause was added to the Bylaw regulation in 2005. Substantial improvement is defined in the Bylaw Regulations as cumulative expansion of habitable space greater than twenty percent (20%). [1.02]
3. Calculated by dividing the full template volume (22 cy/lf) by the required annual sand contribution (varies cy/lf/yr)

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Jurisdictional Review for Protecting Existing Structures at:
69 Baxter Road

Following are the criteria reviewed to document that lots on the east side of Baxter Road are eligible for construction of a coastal engineering structure to protect existing structures on this lot, or infrastructure proximate to this lot, from loss or damage by coastal floodwaters. This is based on criteria established for Coastal Bank in the Nantucket Wetlands Protection Bylaw Regulations (Section 2.05) and the Massachusetts Wetland Protection Regulations (310 CMR 10.30). The information presented below is summarized in Table 1. Summary of Qualifications to Protect the Coastal Bank from Erosion with a CES.

Criteria establishing eligibility:

Coastal Dune fronting Lot: N

The Coastal Dune along the Sconset shoreline has been eroding from north to south starting in the 1970's. The dune fronting this parcel has been permanently lost.

Coastal Bank fronting the lot is eroding: Y

The Coastal Bank fronting this lot is partially vegetated and is comprised of erodible soils. The southerly third of the slope is primarily exposed soil with signs of rill erosion observed. The toe of slope and lower quarter of the slope is primarily exposed soil and is subject to erosion.

Coastal Bank Supports Vegetation: P

The Coastal Bank is partially vegetated. Sparse vegetation is present along the northerly half of the slope while the southerly half has very sparse vegetative cover. The toe lacks vegetative cover.

On vacant lots, Coastal Bank significant to protect Public Infrastructure[1]: N

This lot contains a house. Distance of house from top of Coastal Bank is **45 feet**. This house setback does not meet the imminent hazard criteria (40-foot setback) established for houses on Baxter Road.

Lot supports a pre-1978 Building[2]: Y

There has been a house on this lot since 1940 with a new house constructed in 1996.

Have Structures been improved since 2005[2]: N

The building department building permit records shows there have been no improvements since 2005. The review of building permits issued for this lot is as follows:

1999: Add wet bar and powder room in basement.
1997: Move the house constructed in 1940 house to 320R Milestone.
1997: Move garage to 320R Milestone.

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1996: Build 2 story, 5 bedroom single family dwelling. First floor 1920 sf, Second floor 1830 sf.

Was the house previously relocated landward on lot ("planned retreat"): Y

The house built in 1940 was moved off the lot in 1997.

There is adequate space on this lot to re-locate the house further landward from the top of Coastal Bank: Y

There is approximately 38 feet of landward space on the lot.

Required Sand Contribution Volume:

Site specific Coastal Bank Retreat Rate: 1.0 ft /year (Reach 4)

Time period of retreat calculations by Epsilon Associates, Inc.: 14 years

Annual volume required to compensate for protected Coastal Bank (cy/lf) (based on reach): 2.3 cy/lf

Proposed Starting Volume in Template: 22 cy/lf

Years of annual contribution available in template (i.e. 22/ annual volume)[3]: 9.6 years

Notes:

1. Pursuant to the By-Law Regulations a CES is allowed to protect public infrastructure from loss or damage by floodwaters [By-Law Section 2.5].
2. Pursuant to Bylaw Regulations and state regulations, a CES is allows to protect structures / buildings constructed adjacent to the Coastal Bank before August 1978 (date when state regulations became effective). Bylaw Regulations prevent use of CES to protect pre-1978 structures that were substantially improved. The Substantially improved clause was added to the Bylaw regulation in 2005. Substantial Improvement is defined in the Bylaw Regulations as cumulative expansion of habitable space greater than twenty percent (20%). [1.02]
3. Calculated by dividing the full template volume (22 cy/lf) by the required annual sand contribution (varies cy/lf/yr)

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Jurisdictional Review for Protecting Existing Structures at:
71 Baxter Road

Following are the criteria reviewed to document that lots on the east side of Baxter Road are eligible for construction of a coastal engineering structure to protect existing structures on this lot, or infrastructure proximate to this lot, from loss or damage by coastal floodwaters. This is based on criteria established for Coastal Bank in the Nantucket Wetlands Protection Bylaw Regulations (Section 2.05) and the Massachusetts Wetland Protection Regulations (310 CMR 10.30). The information presented below is summarized in Table 1. Summary of Qualifications to Protect the Coastal Bank from Erosion with a CES.

Criteria establishing eligibility:

Coastal Dune fronting Lot: N

The Coastal Dune along the Sconset shoreline has been eroding from north to south starting in the 1970's. The dune fronting this parcel has been permanently lost.

Coastal Bank fronting the lot is eroding: Y

The Coastal Bank fronting this lot is partially vegetated and is comprised of erodible exposed soils with rill erosion observable on the slope. The toe of slope is subject to erosion.

Coastal Bank Supports Vegetation:

The Coastal Bank is sparsely vegetated.

On vacant lots, Coastal Bank significant to protect Public Infrastructure[1]: N

This lot contains a house. Distance of house from top of Coastal Bank is 59 feet. This house setback does not meet the imminent hazard criteria (40-foot setback) established for houses on Baxter Road.

Lot supports a pre-1978 Building[2]: Y

There has been a house on this lot since 1932/1939.

Have Structures been improved since 2005[2]: Y

The building department building permit records shows there have been improvements since 2005. The review of building permits issued for this lot is as follows:

2009: Relocate the dwelling on the same lot, remove additions, construct finished full cellar. Renovate 1st floor 1500 sf and add 2nd floor 400 sf.
2009: Dismantle cottage/garage.
2005: Construct deck at east entrance and outside shower.
2004: Repair/replace walls and renovate bathroom (interior only).
1982: Bedroom addition.

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Was the house previously relocated landward on lot ("planned retreat"): Y

The house was moved landward in 2009.

There is adequate space on this lot to re-locate the house further landward from the top of Coastal Bank: N

Required Sand Contribution Volume:

Site specific Coastal Bank Retreat Rate: 2.7 ft /year (Reach 3)

Time period of retreat calculations by Epsilon Associates, Inc.: 14 years

Annual volume required to compensate for protected Coastal Bank (cy/lf) (based on reach): 7.1 cy/lf

Proposed Starting Volume in Template: 22 cy/lf

Years of annual contribution available in template (i.e., 22 / annual volume)[3]: 3.1 years

Notes:

1. Pursuant to the By-Law Regulations a CES is allowed to protect public infrastructure from loss or damage by floodwaters [Bylaw Section 2.5].
2. Pursuant to Bylaw Regulations and state regulations, a CES is allows to protect structures / buildings constructed adjacent to the Coastal Bank before August 1978 (date when state regulations became effective). Bylaw Regulations prevent use of CES to protect pre-1978 structures that were substantially improved. The Substantially improved clause was added to the Bylaw regulation in 2005. Substantial Improvement is defined in the Bylaw Regulations as cumulative expansion of habitable space greater than twenty percent (20%). [1.02]
3. Calculated by dividing the full template volume (22 cy/lf) by the required annual sand contribution (varies cy/lf/yr)

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Jurisdictional Review for Protecting Existing Structures at:
73 Baxter Road

Following are the criteria reviewed to document that lots on the east side of Baxter Road are eligible for construction of a coastal engineering structure to protect existing structures on this lot, or infrastructure proximate to this lot, from loss or damage by coastal floodwaters. This is based on criteria established for Coastal Bank in the Nantucket Wetlands Protection Bylaw Regulations (Section 2.05) and the Massachusetts Wetland Protection Regulations (310 CMR 10.30). The information presented below is summarized in Table 1. Summary of Qualifications to Protect the Coastal Bank from Erosion with a CES.

<u>Criteria establishing eligibility:</u>

Coastal Dune fronting Lot: N

The Coastal Dune along the Sconset shoreline has been eroding from north to south starting in the 1970's. The dune fronting this parcel has been permanently lost.

Coastal Bank fronting the lot is eroding: Y

The Coastal Bank fronting this lot is partially vegetated and is comprised of erodible soils. The lower third of the slope is mostly exposed soil and the toe exhibits erosion.

Coastal Bank Supports Vegetation: **P**

The Coastal Bank is partially vegetated with vegetation on the upper two thirds of the slope, and most exposed soil on the lower one third of the slope.

On vacant lots, Coastal Bank significant to protect Public Infrastructure[1]: **N**

This lot contains a house. Distance of house from top of Coastal Bank is 65 feet. This house setback does not meet the imminent hazard criteria (40-foot setback) established for houses on Baxter Road.

Lot supports a pre-1978 Building[2]**: Y**

There has been a house on this lot since 1920.

Have Structures been improved since 2005[2]**: Y**

The building department building permit records shows there have been improvements since 2005. The review of building permits issued for this lot is as follows:

<u>2012:</u> Relocate single family dwelling on same lot. Demolish 350 sf of 1st floor, add 150 sf to first floor for kitchen, renovate baths, reside, and re-roof. Net change is a 200 s.f. reduction in floor area.

<u>1989:</u> Construct a 10 ft x 14 ft (140 s.f.) addition to garage for storage – 0% increase in habitable space.

<u>1989:</u> Construct 253 s.f. addition for library.

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1986: Addition of 2nd story bathroom no area provided. Bathroom is not considered habitable space – 0% increase in habitable space.

Summary: No total square foot of floor area could be affirmed from the records. Review of the 1989 permit application suggests the principle structure had a floor area of 1,534 s.f. Records show that between 1989 and 2013 there was a net increase 53 sf in habitable space. This correlates to approximately a 3.5% increase in floor area. Therefore, this dwelling is eligible as a pre-1978 house because the cumulative increase in habitable space is less than 200%, if applicable.

Was the house previously relocated landward on lot ("planned retreat"): Y

The house was moved landward in 2012.

There is adequate space on this lot to re-locate the house further landward from the top of Coastal Bank: N

The house was moved as far west as possible, and is no[t] right along the Baxter Road right of way.

Required Sand Contribution Volume:

Site specific Coastal Bank Retreat Rate: 2.7 ft /year (R[e]ch 3)

Time period of retreat calculations by Epsilo[n] Asso[c]s Inc.: 14 years

Annual volume required to compensate for pro[t]cted Coastal Bank (cy/lf) (based on reach): 7.1 cy/lf

Proposed Starting Volu[m]e in [t]emplate: 22 cy/lf

Years of annual contr[i]ution avail[a]ble in template (i.e., 22/ annual volume)[3]: 3.1 years

Notes:

1. Pursuant to the By-Law Regulations a CES is allowed to protect public infrastructure from loss or damage by floodwaters [Bylaw Section 2.5].
2. Pursuant to Bylaw Regulations and state regulations, a CES is allows to protect structures / buildings constructed adjacent to the Coastal Bank before August 1978 (date when state regulations became effective). Bylaw Regulations prevent use of CES to protect pre-1978 structures that were substantially improved. The Substantially improved clause was added to the Bylaw regulation in 2005. Substantial Improvement is defined in the Bylaw Regulations as cumulative expansion of habitable space greater than twenty percent (20%). [1.02]
3. Calculated by dividing the full template volume (22 cy/lf) by the required annual sand contribution (varies cy/lf/yr)

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Jurisdictional Review for Protecting Existing Structures at:
75 Baxter Road

Following are the criteria reviewed to document that lots on the east side of Baxter Road are eligible for construction of a coastal engineering structure to protect existing structures on this lot, or infrastructure proximate to this lot, from loss or damage by coastal floodwaters. This is based on criteria established for Coastal Bank in the Nantucket Wetlands Protection Bylaw Regulations (Section 2.05) and the Massachusetts Wetland Protection Regulations (310 CMR 10.30). The information presented below is summarized in Table 1. Summary of Qualifications to Protect the Coastal Bank from Erosion with a CES.

<u>Criteria establishing eligibility:</u>

Coastal Dune fronting Lot: N

The Coastal Dune along the Sconset shoreline has been eroding from north to south starting in the 1970's. The dune fronting this parcel has been permanently lost.

Coastal Bank fronting the lot is eroding: Y

The Coastal Bank fronting this lot is partially vegetated, the southerly half appears well vegetated while the northerly half shows signs of slope failure. The toe od slope exhibits toe erosion.

Coastal Bank Supports Vegetation:

The Coastal Bank is partially vegetated. The southerly half appears well vegetated while on the northerly half staggered bluff vegetation is observed which is a sign of slope failure.

On vacant lots, Coastal Bank significant to protect Public Infrastructure[1]: N

This lot contains a house. Distance of house from top of Coastal Bank is **41 feet**. This house setback does not meet the imminent hazard criteria (**40-foot setback**) established for houses on Baxter Road.

Lot supports a pre-1978 Building[2]: Y

There has been a house on this lot since 1922/1923.

Have Structures been improved since 2005[2]: N

The building department building permit records shows there have been no improvements since 2005. The review of building permits issued for this lot is as follows:

<u>2004:</u> Added dormer and windows to existing garage, replace garage doors, add storage loft, construct pergola. T

<u>2002:</u> Add dormer, add two decks, renovate interior.

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Was the house previously relocated landward on lot ("planned retreat"): Y

There is adequate space on this lot to re-locate the house further landward from the top of Coastal Bank: N

Required Sand Contribution Volume:

Site specific Coastal Bank Retreat Rate: 2.7 ft /year (Reach 3)

Time period of retreat calculations by Epsilon Associates, Inc.: 14 years

Annual volume required to compensate for protected Coastal Bank (cy/lf) (based on reach): 7.1 cy/lf

Proposed Starting Volume in Template: 22 cy/lf

Years of annual contribution available in template (i.e., 22/ annual volume)[3]: 3.1 years

Notes:

1. Pursuant to the By-Law Regulations a CES is allowed to protect public infrastructure from loss or damage by floodwaters [Bylaw Section 2.5].
2. Pursuant to Bylaw Regulations and state regulations, a CES is allows to protect structures / buildings constructed adjacent to the Coastal Bank before August 1978 (date when state regulations became effective). Bylaw Regulations prevent use of CES to protect pre-1978 structures that were substantially improved. The Substantially improved clause was added to the Bylaw regulation in 2005. Substantial Improvement is defined in the Bylaw Regulations as cumulative expansion of habitable space greater than twenty percent (20%). [1.02]
3. Calculated by dividing the full template volume (22 cy/lf) by the required annual sand contribution (varies cy/lf/yr)

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Jurisdictional Review for Protecting Existing Structures at:
77 Baxter Road

Following are the criteria reviewed to document that lots on the east side of Baxter Road are eligible for construction of a coastal engineering structure to protect existing structures on this lot, or infrastructure proximate to this lot, from loss or damage by coastal floodwaters. This is based on criteria established for Coastal Bank in the Nantucket Wetlands Protection Bylaw Regulations (Section 2.05) and the Massachusetts Wetland Protection Regulations (310 CMR 10.30). The information presented below is summarized in Table 1. Summary of Qualifications to Protect the Coastal Bank from Erosion with a CES.

<u>Criteria establishing eligibility:</u>

Coastal Dune fronting Lot: N

The Coastal Dune along the Sconset shoreline has been eroding from north to south starting in the 1970's. The dune fronting this parcel has been permanently lost.

Coastal Bank fronting the lot is eroding: Y

The Coastal Bank fronting this lot is partially vegetated and is comprised of erodible exposed soils from toe to top of slope. Extensive portion (about 50%) of the slope is comprised of exposed soil. Slope failure observed, despite the presence of a coir terrace.

Coastal Bank Supports Vegetation: P

The Coastal Bank is partially vegetated only about 5% cover by vegetation. Sparse vegetation is present along the upper third of the slope.

On vacant lots, Coastal Bank significant to protect Public Infrastructure[1]: N

This lot contains a house. Distance of house from top of Coastal Bank is 76 feet. This house setback does not meet the imminent hazard criteria (40-foot setback) established for houses on Baxter Road.

Lot supports a pre-1978 Building[2]: Y

There has been a structure (two garages linked to house at 79 Baxter) on this lot since 1940. The primary house, subsequently moved back on the lot, was built in 1962/3.

Have Structures been improved since 2005[2]: Y

The building department building permit records shows there have been improvements since 2005. The review of building permits issued for this lot is as follows:

<u>2005:</u> Demolish 558 s.f. bunk house – 558 s.f. reduction in habitable space.

<u>2006:</u> Relocate single family house on same lot and add 555 s.f. addition per Certificate of Appropriateness No. 47427 – 555 s.f increase inhabitable space.

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Summary: Net change is a 3 s.f. reduction in floor area. Therefore, this dwelling is eligible as a pre-1978 house because the cumulative increase in habitable space is less than 20%.

Was the house previously relocated landward on lot ("planned retreat"): Y

Yes the house was moved in 2006.

There is adequate space on this lot to re-locate the house further landward from the top of Coastal Bank: N

The house was moved as far west as possible, and is now right along the Baxter Road right of way.

Required Sand Contribution Volume:

Site specific Coastal Bank Retreat Rate: 2.7 ft /year (Reach 3

Time period of retreat calculations by Epsilon Associates, Inc.: 14 years

Annual volume required to compensate for protected Coastal Bank (cy/lf) (based on reach): 7.1 cy/lf

Proposed Starting Volume in Template: 22 cy/lf

Years of annual contribution available in template (i.e., 22/ annual volume)[3]: 3.1 years

Notes:

1. Pursuant to the By-law Regulations a CES is allowed to protect public infrastructure from loss or damage by floodwaters [Bylaw Section 2.5].
2. Pursuant to Bylaw Regulations and state regulations, a CES is allows to protect structures / buildings constructed adjacent to the Coastal Bank before August 1978 (date when state regulations became effective). Bylaw Regulations prevent use of CES to protect pre-1978 structures that were substantially improved. The Substantially improved clause was added to the Bylaw regulation in 2005. Substantial Improvement is defined in the Bylaw Regulations as cumulative expansion of habitable space greater than twenty percent (20%). [1.02]
3. Calculated by dividing the full template volume (22 cy/lf) by the required annual sand contribution (varies cy/lf/yr)

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Jurisdictional Review for Protecting Existing Structures at:
79 Baxter Road

Following are the criteria reviewed to document that lots on the east side of Baxter Road are eligible for construction of a coastal engineering structure to protect existing structures on this lot, or infrastructure proximate to this lot, from loss or damage by coastal floodwaters. This is based on criteria established for Coastal Bank in the Nantucket Wetlands Protection Bylaw Regulations (Section 2.05) and the Massachusetts Wetland Protection Regulations (310 CMR 10.30). The information presented below is summarized in Table 1. Summary of Qualifications to Protect the Coastal Bank from Erosion with a CES.

Criteria establishing eligibility:

Coastal Dune fronting Lot: N

The Coastal Dune along the Sconset shoreline has been eroding from north to south starting in the 1970's. The dune fronting this parcel has been permanently lost.

Coastal Bank fronting the lot is eroding: Y

The Coastal Bank fronting this lot is mostly vegetated and is comprised of erodible exposed soils along the toe of slope. Slope failure is observed on the bank face despite the presence of a coir terrace.

Coastal Bank Supports Vegetation:

The Coastal Bank is mostly vegetated. partially vegetated. The toe lacks vegetated and crescent shaped areas of exposed soil (no vegetation) are signs of slope failure.

On vacant lots, Coastal Bank significant to protect Public Infrastructure[1]: N

This lot contains a house. Distance of house from top of Coastal Bank is 50 feet. This house setback does not meet the imminent hazard criteria (40-foot setback) established for houses on Baxter Road.

Lot supports a pre-1978 Building[2]: Y

There has been a house on this lot since 1916/1923.

Have Structures been improved since 2005[2]: N

The building department building permit records shows there have been no improvements since 1999 with the most recent permit issued to relocate the house on the lot in 2013 with no dimensional changes. The review of building permits issued for this lot is as follows:

2013: Relocate single family house on the same lot. Building Permit reports dwelling contains 3,738 s.f. total floor area. No dimensional changes with building relocation – 0% change in habitable area.

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1999: Replace windows and redo roof walk. No dimensional changes – 0% change in habitable area.

1997: Deck addition to dwelling. Building Permit issued for a 287 s.f. deck addition – 0% in habitable area

1989: Alteration and addition to single family 3,272 s.f. dwelling. Building Permit issued for 466 s.f. net addition, use undefined – 14.2% increase in floor area. Pre-addition total floor area was determined to be 3,272 s.f. as there are no other additions recorded in Building Department files between 1989 and 2013.

Summary: Cumulative increase in habitable space from 1989 to 2013 was 466 s.f. divided by original floor area of 3,272 s.f. correlates to 14.2% increase in floor area, assumed to be habitable space. Therefore, this dwelling is eligible as a pre-1978 house because the cumulative increase in habitable space is less than 20%.

Was the house previously relocated landward on lot ("planned retreat"): Y

The house was moved in 2013.

There is adequate space on this lot to re-locate the house further landward from the top of Coastal Bank: N

The house is located right along the Baxter Road ROW.

Required Sand Contribution Volume:

Site specific Coastal Bank Retreat Rate: 1.7 ft / year (Reach 3)

Time period of retreat calculation by Epsilon Associates, Inc.: 14 years

Annual volume required to compensate for protected Coastal Bank (cy/lf) (based on reach): 7.1 cy/lf

Proposed Starting Volume in Template: 22 cy/lf

Years of annual contribution available in template (i.e., 22/ annual volume)[3]: 3.1 years

Notes:

1. Pursuant to the By-Law Regulations a CES is allowed to protect public infrastructure from loss or damage by floodwaters [Bylaw Section 2.5].
2. Pursuant to Bylaw Regulations and state regulations, a CES is allows to protect structures / buildings constructed adjacent to the Coastal Bank before August 1978 (date when state regulations became effective). Bylaw Regulations prevent use of CES to protect pre-1978 structures that were substantially improved. The Substantially improved clause was added to the Bylaw regulation in 2005. Substantial Improvement is defined in the Bylaw Regulations as cumulative expansion of habitable space greater than twenty percent (20%). [1.02]

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3. Calculated by dividing the full template volume (22 cy/lf) by the required annual sand contribution (varies cy/lf/yr)

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Jurisdictional Review for Protecting Existing Structures at:
81 Baxter Road

Following are the criteria reviewed to document that lots on the east side of Baxter Road are eligible for construction of a coastal engineering structure to protect existing structures on this lot, or infrastructure proximate to this lot, from loss or damage by coastal floodwaters. This is based on criteria established for Coastal Bank in the Nantucket Wetlands Protection Bylaw Regulations (Section 2.05) and the Massachusetts Wetland Protection Regulations (310 CMR 10.30). The information presented below is summarized in Table 1. Summary of Qualifications to Protect the Coastal Bank from Erosion with a CES.

<u>Criteria establishing eligibility:</u>

Coastal Dune fronting Lot: N

The Coastal Dune along the Sconset shoreline has been eroding from north to south starting in the 1970's. The dune fronting this parcel has been permanently lost.

Coastal Bank fronting the lot is eroding: Y

The Coastal Bank fronting this lot is partially vegetated and is comprised of erodible exposed soils from toe to top of slope. Rill erosion is observed on the bank face, and slumping is observed at the toe of slope, despite the presence of a coir terrace.

Coastal Bank Supports Vegetation:

The Coastal Bank is partially vegetated. Sparse vegetation is present along the upper half of the slope.

On vacant lots, Coastal Bank significant to protect Public Infrastructure[1]: N

This lot contains a house. Distance of house from top of Coastal Bank is 48 feet. This house setback does not meet the imminent hazard criteria (40-foot setback) established for houses on Baxter Road.

Lot supports a pre-1978 Building[2]: Y

The original house was constructed in 1923. The new house was built in 1994.

Have Structures been improved since 2005[2]: N

The building department building permit records show there have been no improvements since 2001. The review of building permits issued for this lot is as follows:

<u>2001:</u> Addition to dwelling, add deck, renovate 1st floor.

<u>1993:</u> 2 Construction of a 2 story, 4 bedroom single family dwelling.

<u>1993:</u> Demolish a 1392 sf, one story dwelling with three bedrooms.

Was the house previously relocated landward on lot ("planned retreat"): Y

The house was moved in 1993.

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There is adequate space on this lot to re-locate the house further landward from the top of Coastal Bank: N

The house was moved as far west as possible, and is now right along the Baxter Road right of way.

Required Sand Contribution Volume:

Site specific Coastal Bank Retreat Rate: 2.7 ft /year (Reach 3)

Time period of retreat calculations by Epsilon Associates, Inc.: 14 years

Annual volume required to compensate for protected Coastal Bank (cy/lf (based on reach): 7.1 cy/lf

Proposed Starting Volume in Template: 22 cy/lf

Years of annual contribution available in template (i.e., 22 / annual volume)[3]: 3.1 years

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Notes:

1. Pursuant to the By-Law Regulations a CES is allowed to protect public infrastructure from loss or damage by floodwaters [Bylaw Section 2.5].
2. Pursuant to Bylaw Regulations and State regulations, a CES is allows to protect structures / buildings constructed adjacent to the Coastal Bank before August 1978 (date when state regulations became effective). Bylaw Regulations prevent use of CES to protect pre-1978 structures that were substantially improved. The Substantially improved clause was added to the Bylaw regulation in 2005. Substantial Improvement is defined in the Bylaw Regulations as cumulative expansion of habitable space greater than twenty percent (20%). [1.02]
3. Calculated by dividing the full template volume (22 cy/lf) by the required annual sand contribution (varies cy/lf/yr)

Jurisdictional Review for Protecting Existing Structures at:
83 Baxter Road

Following are the criteria reviewed to document that lots on the east side of Baxter Road are eligible for construction of a coastal engineering structure to protect existing structures on this lot, or infrastructure proximate to this lot, from loss or damage by coastal floodwaters. This is based on criteria established for Coastal Bank in the Nantucket Wetlands Protection Bylaw Regulations (Section 2.05) and the Massachusetts Wetland Protection Regulations (310 CMR 10.30). The information presented below is summarized in Table 1. Summary of Qualifications to Protect the Coastal Bank from Erosion with a CES.

Criteria establishing eligibility:

Coastal Dune fronting Lot: N

The Coastal Dune along the Sconset shoreline has been eroding from north to south starting in the 1970's. The dune fronting this parcel has been permanently lost.

Coastal Bank fronting the lot is eroding: Y

The Coastal Bank fronting this lot lacks vegetation and is comprised of erodible exposed soils from toe to top of slope. Rill erosion is observed on the bank face, and slumping is observed at the toe of slope, despite the presence of coir terrac

Coastal Bank Supports Vegetation: **P**

The Coastal Bank is sparsely vegetated along the upper half to upper third of the slope.

On vacant lots, Coastal Bank significant to protect Public Infrastructure[1]: **N**

This lot contains a house. Distance of house from top of Coastal Bank is 25 feet. This house setback meets the imminent hazard criteria (40-foot setback) established for houses on Baxter Road.

Lot supports a pre-1978 Building[2]**:**

There has been a house on this lot since 1940.

Have Structures been improved since 2005[2]**: N**

The building department building permit records shows there have been no improvements since 2001. The review of building permits issued for this lot is as follows:

2001: Relocate one story 2,330 s.f. dwelling and place on a new foundation on the same lot. No dimensional changes occurred – 0% change in habitable space.

1991: Addition to a one story 2,140 s.f. dwelling, Building Permit issued for a 200 s.f. sunroom addition and replacement roof over dining room – 9.3% increase in floor area.

1982: Addition to a one story 2,041 s.f. dwelling. Building Permit issued for a 99 s.f. kitchen extension – 4.9% increase in floor area. Structure dimension was determined to be 2,041 s.f. based on review of plot plans included in the 1982 and 1991 Building Permit files. Note: There is

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confusion caused reviewing just application because the pre-permit square footage is listed erroneously as 1,150 s.f on the 1982 application. Based on plot plans included in the record and documents filed for subsequent permits issued for this property, it is clear that this square footage entry was entered in error and should have been 2,041s.f. to be consistent with the balance of the record.

Conclusion: Cumulative increase in habitable space from 1982 to 1991 was 299 s.f. divided by original floor area of 2,041 s.f. correlates to 14.2% increase in floor area, assumed to be habitable space. Therefore, the pre-2005 cumulative increase in habitable space is less than 20%, and would not meet definition of "substantial improvement", if applicable.

Was the house previously relocated landward on lot ("planned retreat"): Y

The house was moved landward in 2001.

There is adequate space on this lot to re-locate the house further landward from the top of Coastal Bank: N

The house was moved as far west as possible, and is now right along the Baxter Road right of way.

Required Sand Contribution Volume:

Site specific Coastal Bank Retreat Rate: 2.7 ft / year (Reach 3)

Time period of retreat calculations by Fuss & O'Neill Associates, Inc.: 14 years

Annual volume required to compensate for Impacted Coastal Bank (cy/lf) (based on reach): 7.1 cy/lf

Proposed Starting Volume in Template: 22 cy/lf

Years of annual contribution available in template (i.e., 22/ annual volume)[3]: 3.1 years

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Notes:

1. Pursuant to the By-Law Regulations a CES is allowed to protect public infrastructure from loss or damage by floodwaters [Bylaw Section 2.5].
2. Pursuant to Bylaw Regulations and state regulations, a CES is allows to protect structures / buildings constructed adjacent to the Coastal Bank before August 1978 (date when state regulations became effective). Bylaw Regulations prevent use of CES to protect pre-1978 structures that were substantially improved. The Substantially improved clause was added to the Bylaw regulation in 2005. Substantial Improvement is defined in the Bylaw Regulations as cumulative expansion of habitable space greater than twenty percent (20%). [1.02]
3. Calculated by dividing the full template volume (22 cy/lf) by the required annual sand contribution (varies cy/lf/yr)

Jurisdictional Review for Protecting Existing Structures at:
85 Baxter Road

Following are the criteria reviewed to document that lots on the east side of Baxter Road are eligible for construction of a coastal engineering structure to protect existing structures on this lot, or infrastructure proximate to this lot, from loss or damage by coastal floodwaters. This is based on criteria established for Coastal Bank in the Nantucket Wetlands Protection Bylaw Regulations (Section 2.05) and the Massachusetts Wetland Protection Regulations (310 CMR 10.30). The information presented below is summarized in Table 1. Summary of Qualifications to Protect the Coastal Bank from Erosion with a CES.

<u>Criteria establishing eligibility:</u>

Coastal Dune fronting Lot: N

The Coastal Dune along the Sconset shoreline has been eroding from north to south starting in the 1970's. The dune fronting this parcel has been permanently lost.

Coastal Bank fronting the lot is eroding: Y

The Coastal Bank fronting this lot lacks vegetation and is comprised of erodible exposed soils from toe to top of slope. Rill erosion is observed on the bank face. Building materials exposed by eroding bluff were removed from the site in the spring of 2020.

Coastal Bank Supports Vegetation: N

The Coastal Bank lacks vegetation

On vacant lots, Coastal Bank significant to protect Public Infrastructure[1]: Y

Distance of roadway from top of Coastal Bank is 58 feet. This roadway setback does meet the imminent hazard criteria (65-foot setback) established for Baxter Road.

Lot supports a pre-1978 Building: N

Have Structures been improved since 2005[2]: N.A.

The review of building permits issued for this lot is as follows:

<u>2006</u>: Demo existing 748 sf dwelling
<u>2010</u>: Prepare dwelling to move off lot; amended to reflect move of primary structure to 47 Monomoy
<u>2010</u>: Prepare dwelling for move off lot
<u>2011</u>: Demolish garage

Was the house previously relocated landward on lot ("planned retreat"): Y

This lot is vacant. The house was moved off the lot in 2011.

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There is adequate space on this lot to re-locate the house further landward from the top of Coastal Bank: N.A.

This lot is vacant.

Required Sand Contribution Volume:

Site specific Coastal Bank Retreat Rate: 4.7 ft /year (Reach 2)

Time period of retreat calculations by Epsilon Associates, Inc.: 19 years

Annual volume required to compensate for protected Coastal Bank (cy/lf (based on reach): 12.1 cy/lf

Proposed Starting Volume in Template: 22 cy/lf

Years of annual contribution available in template (i.e., 22/ annual volume)[3]: 1.8 years

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Notes:

1. Pursuant to the By-Law Regulations a CES is allowed to protect public infrastructure from loss or damage by floodwaters [Bylaw Section 2.5].
2. Pursuant to Bylaw Regulations and state regulations, a CES is allows to protect structures / buildings constructed adjacent to the Coastal Bank before August 1978 (date when state regulations became effective). Bylaw Regulations prevent use of CES to protect pre-1978 structures that were substantially improved. The Substantially improved clause was added to the Bylaw regulation in 2005. Substantial Improvement is defined in the Bylaw Regulations as cumulative expansion of habitable space greater than twenty percent (20%). [1.02]
3. Calculated by dividing the full template volume (22 cy/lf) by the required annual sand contribution (varies cy/lf/yr)

Jurisdictional Review for Protecting Existing Structures at:
87 Baxter Road

Following are the criteria reviewed to document that lots on the east side of Baxter Road are eligible for construction of a coastal engineering structure to protect existing structures on this lot, or infrastructure proximate to this lot, from loss or damage by coastal floodwaters. This is based on criteria established for Coastal Bank in the Nantucket Wetlands Protection Bylaw Regulations (Section 2.05) and the Massachusetts Wetland Protection Regulations (310 CMR 10.30). The information presented below is summarized in Table 1. Summary of Qualifications to Protect the Coastal Bank from Erosion with a CES.

<u>Criteria establishing eligibility:</u>

Coastal Dune fronting Lot: N

The Coastal Dune along the Sconset shoreline has been eroding from north to south starting in the 1970's. The dune fronting this parcel has been permanently lost.

Coastal Bank fronting the lot is eroding: N

The Coastal Bank fronting this lot was re-planted as part of the existing geotube project. Erosion has been abated by the existing geotube project and re-planting efforts.

Coastal Bank Supports Vegetation: **Y**

The Coastal Bank is well vegetated above the geotube system. and end returns. The southerly end supports sparser vegetative cover adjacent to the sand ramp.

On vacant lots, Coastal Bank significant to protect Public Infrastructure[1]: **Y**

Distance of roadway from top of Coastal Bank is 54 feet. This roadway setback does meet the imminent hazard criteria (65-foot setback) established for Baxter Road.

Lot supports a pre-1978 Building: N

This lot is vacant.

Have Structures been improved since 2005[2]**: Y**

The review of building permits issued for this lot is as follows:

<u>1976</u>: Construct one family dwelling
<u>1988</u>: Add and alter dwelling
<u>1989</u>: Add 192 sf and alter 972 sf in dwelling
<u>1990</u>: Alterations ("interior change")
<u>2003</u>: Renovate interior, shingle roof
<u>2007</u>: Relocate 1 dwelling unit on same lot on crawl space
<u>2013</u>: Demolish 2 story single family dwelling

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Was the house previously relocated landward on lot ("planned retreat"): Y

The house was moved in 2007 and demolished in 2013.

There is adequate space on this lot to re-locate the house further landward from the top of Coastal Bank: N.A.

This lot is vacant.

Required Sand Contribution Volume:

Site specific Coastal Bank Retreat Rate: 4.7 ft /year (Reach 2)

Time period of retreat calculations by Epsilon Associates, Inc.: 19 years

Annual volume required to compensate for protected Coastal Bank (cy/lf (based on reach): 12.1 cy/lf

Proposed Starting Volume in Template: 22 cy/lf

Years of annual contribution available in template (22 cy/lf / annual volume)[3]: 1.8 years

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Notes:

1. Pursuant to the By-Law Regulations a CES is allowed to protect public infrastructure from loss or damage by floodwaters [By-Law Section 2.5].
2. Pursuant to Bylaw Regulations and state regulations, a CES is allows to protect structures / buildings constructed adjacent to the Coastal Bank before August 1978 (date when state regulations became effective). Bylaw Regulations prevent use of CES to protect pre-1978 structures that were substantially improved. The Substantially improved clause was added to the Bylaw regulation in 2005. Substantial Improvement is defined in the Bylaw Regulations as cumulative expansion of habitable space greater than twenty percent (20%). [1.02]
3. Calculated by dividing the full template volume (22 cy/lf) by the required annual sand contribution (varies cy/lf/yr)

Jurisdictional Review for Protecting Existing Structures at:
91 Baxter Road

Following are the criteria reviewed to document that lots on the east side of Baxter Road are eligible for construction of a coastal engineering structure to protect existing structures on this lot, or infrastructure proximate to this lot, from loss or damage by coastal floodwaters. This is based on criteria established for Coastal Bank in the Nantucket Wetlands Protection Bylaw Regulations (Section 2.05) and the Massachusetts Wetland Protection Regulations (310 CMR 10.30). The information presented below is summarized in Table 1. Summary of Qualifications to Protect the Coastal Bank from Erosion with a CES.

Criteria establishing eligibility:

Coastal Dune fronting Lot: N

The Coastal Dune along the Sconset shoreline has been eroding from north to south starting in the 1970's. The dune fronting this parcel has been permanently lost.

Coastal Bank fronting the lot is eroding: N

The Coastal Bank fronting this lot was re-planted as part of the existing geotube project. Erosion has been abated by the existing geotube project and re-planting efforts.

Coastal Bank Supports Vegetation: Y

The Coastal Bank is well vegetated above the geotube system.

On vacant lots, Coastal Bank significant to protect Public Infrastructure[1]: Y

Distance of roadway from top of Coastal Bank is 36 feet. This roadway setback does meet the imminent hazard criteria (30 foot setback) established for Baxter Road.

Lot supports a pre-1978 Building[2]: N

Have Structures been improved since 2005[2]: N.A.

Was the house previously relocated landward on lot ("planned retreat"): NA

There is adequate space on this lot to re-locate the house further landward from the top of Coastal Bank: N.A.

This lot is vacant.

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Required Sand Contribution Volume:

Site specific Coastal Bank Retreat Rate: 4.7 ft /year (Reach 2)

Time period of retreat calculations by Epsilon Associates, Inc.: 19 years

Annual volume required to compensate for protected Coastal Bank (cy/lf (based on reach): 12.1 cy/lf

Proposed Starting Volume in Template: 22 cy/lf

Years of annual contribution available in template (i.e., 22/ annual volume)[3]: 1.8 years

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Notes:

1. Pursuant to the By-Law Regulations a CES is allowed to protect public infrastructure from loss or damage by floodwaters [Bylaw Section 2.5].
2. Pursuant to Bylaw Regulations and state regulations, a CES is allows to protect structures / buildings constructed adjacent to the Coastal Bank before August 1978 (date when state regulations became effective). Bylaw Regulations prevent use of CES to protect pre-1978 structures that were substantially improved. The Substantial improved clause was added to the Bylaw regulation in 2005. Substantial Improvement is defined in the Bylaw Regulations as cumulative expansion of habitable space greater than twenty percent (20%). [illegible]
3. Calculated by dividing the full template volume (22 cy/lf) by the required annual sand contribution (varies cy/lf/yr)

Jurisdictional Review for Protecting Existing Structures at:
93 Baxter Road

Following are the criteria reviewed to document that lots on the east side of Baxter Road are eligible for construction of a coastal engineering structure to protect existing structures on this lot, or infrastructure proximate to this lot, from loss or damage by coastal floodwaters. This is based on criteria established for Coastal Bank in the Nantucket Wetlands Protection Bylaw Regulations (Section 2.05) and the Massachusetts Wetland Protection Regulations (310 CMR 10.30). The information presented below is summarized in Table 1. Summary of Qualifications to Protect the Coastal Bank from Erosion with a CES.

Criteria establishing eligibility:

Coastal Dune fronting Lot: N

The Coastal Dune along the Sconset shoreline has been eroding from north to south starting in the 1970's. The dune fronting this parcel has been permanently lost.

Coastal Bank fronting the lot is eroding: N

The Coastal Bank fronting this lot was re-planted as part of the existing geotube project. Erosion has been abated by the existing geotube project and re-planting efforts.

Coastal Bank Supports Vegetation: Y

The Coastal Bank is well vegetated above the geotube system.

On vacant lots, Coastal Bank significant to protect Public Infrastructure[1]: N

Distance of roadway from top of Coastal Bank is 3 feet. This house setback does meet the imminent hazard criteria (40-foot setback) established for houses on Baxter Road.

Lot supports a pre-1978 Building[2]: Y

The house has been on the lot since 1950/1951.

Have Structures been improved since 2005[2]: Y

The review of building permits issued for this lot is as follows:

1992: Relocate garage on same lot
1992: Relocate 1 dwelling unit on same lot
2005: Renovate 140 sf kitchen, 2 full baths 100 sf, new walls living room & new floor in family room "interior only"
2010: Relocate dwelling on same lot
2010: Relocate garage on same lot

Was the house previously relocated landward on lot ("planned retreat"): Y

The house was moved in 1992 and again in 2010.

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There is adequate space on this lot to re-locate the house further landward from the top of Coastal Bank: N

The house is located right along the Baxter Road ROW.

Required Sand Contribution Volume:

Site specific Coastal Bank Retreat Rate: 4.7 ft /year (Reach 2)

Time period of retreat calculations by Epsilon Associates, Inc.: 19 years

Annual volume required to compensate for protected Coastal Bank (cy/lf (based on reach): 12.1 cy/lf

Proposed Starting Volume in Template: 22 cy/lf

Years of annual contribution available in template (i.e., 22/ annual volume)[3]: 1.8 years

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Notes:

1. Pursuant to the By-Law Regulations a CES is allowed to protect public infrastructure from loss or damage by floodwaters [Bylaw Section 2.5].
2. Pursuant to Bylaw Regulations and state regulations, a CES is allows to protect structures / buildings constructed adjacent to the Coastal Bank before August 1978 (date when state regulations became effective). Bylaw Regulations prevent use of CES to protect pre-1978 structures that were substantially improved. The Substantially improved clause was added to the Bylaw regulation in 2005. Substantial Improvement is defined in the Bylaw Regulations as cumulative expansion of habitable space greater than twenty percent (20%). [1.02]
3. Calculated by dividing the full template volume (22 cy/lf) by the required annual sand contribution (varies cy/lf/yr)

Jurisdictional Review for Protecting Existing Structures at:
97 Baxter Road

Following are the criteria reviewed to document that lots on the east side of Baxter Road are eligible for construction of a coastal engineering structure to protect existing structures on this lot, or infrastructure proximate to this lot, from loss or damage by coastal floodwaters. This is based on criteria established for Coastal Bank in the Nantucket Wetlands Protection Bylaw Regulations (Section 2.05) and the Massachusetts Wetland Protection Regulations (310 CMR 10.30). The information presented below is summarized in Table 1. Summary of Qualifications to Protect the Coastal Bank from Erosion with a CES.

Criteria establishing eligibility:

Coastal Dune fronting Lot: N

The Coastal Dune along the Sconset shoreline has been eroding from north to south starting in the 1970's. The dune fronting this parcel has been permanently lost.

Coastal Bank fronting the lot is eroding: N

The Coastal Bank fronting this lot was re-planted as part of the existing geotube project. Erosion has been abated by the existing geotube project and re-planting efforts.

Coastal Bank Supports Vegetation: Y

The Coastal Bank is well vegetated above the geotube system.

On vacant lots, Coastal Bank significant to protect Public Infrastructure[1]: N

Distance of roadway from top of Coastal Bank is 14 feet. This house setback does meet the imminent hazard criteria (40 foot setback) established for houses on Baxter Road.

Lot supports a pre-1978 Building[2]: Y

A house has been on the lot since 1940.

Have Structures been improved since 2005[2]: Y

The review of building permits issued for this lot is as follows:

1972: Addition
1975: Moved per HDC file
1982: Garage added
1982: Addition (enlarge one room, enclose porch)
1988: Moved house on same lot
1988: Move garage on same lot
1989: Addition
1996: Renovate 2nd floor bath & deck and mudroom additions
1998: Add 839 sf unfinished 2nd floor making a 3 bedroom single dwelling unit, 297 sf 1st addition, reno 160 sf kitchen area

DRAFT

2005: demo 24' x 16' section of studio due to bank erosion
2010: Move 400 sf storage building off lot to 99 Baxter
2010: Moved part of building to 7 Plainfield leaving 720 sf portion for conversion to 1 dwelling unit
2010: Convert & relocate existing remaining elements of house per plans for one dwelling unit

Was the house previously relocated landward on lot ("planned retreat"): Y

The house was moved in 1975, 1988 and 2010.

There is adequate space on this lot to re-locate the house further landward from the top of Coastal Bank: N

The remaining house is located along the Baxter Road ROW.

Required Sand Contribution Volume:

Site specific Coastal Bank Retreat Rate: 4.7 ft /year (Reach 2)

Time period of retreat calculations by Epsilon Associates, Inc.: 19 years

Annual volume required to compensate for protected Coastal Bank (cy/lf (based on reach): 12.1 cy/lf

Proposed Starting Volume in Template: 22 cy/lf

Years of annual contribution available in template (i.e., 22/ annual volume)[3]: 1.8 years

DRAFT

Notes:

1. Pursuant to the By-Law Regulations a CES is allowed to protect public infrastructure from loss or damage by floodwaters [Bylaw Section 2.5].
2. Pursuant to Bylaw Regulations and state regulations, a CES is allows to protect structures / buildings constructed adjacent to the Coastal Bank before August 1978 (date when state regulations became effective). Bylaw Regulations prevent use of CES to protect pre-1978 structures that were substantially improved. The Substantially improved clause was added to the Bylaw regulation in 2005. Substantial Improvement is defined in the Bylaw Regulations as cumulative expansion of habitable space greater than twenty percent (20%). [1.02]
3. Calculated by dividing the full template volume (22 cy/lf) by the required annual sand contribution (varies cy/lf/yr)

Jurisdictional Review for Protecting Existing Structures at:
99 Baxter Road

Following are the criteria reviewed to document that lots on the east side of Baxter Road are eligible for construction of a coastal engineering structure to protect existing structures on this lot, or infrastructure proximate to this lot, from loss or damage by coastal floodwaters. This is based on criteria established for Coastal Bank in the Nantucket Wetlands Protection Bylaw Regulations (Section 2.05) and the Massachusetts Wetland Protection Regulations (310 CMR 10.30). The information presented below is summarized in Table 1. Summary of Qualifications to Protect the Coastal Bank from Erosion with a CES.

Criteria establishing eligibility:

Coastal Dune fronting Lot: N

The Coastal Dune along the Sconset shoreline has been eroding from north to south starting in the 1970's. The dune fronting this parcel has been permanently lost.

Coastal Bank fronting the lot is eroding: N

The Coastal Bank fronting this lot was re-planted as part of the existing geotube project. Erosion has been abated by the existing geotube project and re-planting efforts.

Coastal Bank Supports Vegetation: Y

The Coastal Bank is well vegetated above the geotube system.

On vacant lots, Coastal Bank significant to protect Public Infrastructure[1]: Y

This lot contains a house. Distance of house from top of Coastal Bank is 17 feet. This house setback does meet the imminent hazard criteria (40-foot setback) established for house on Baxter Road.

Lot supports a pre-1978 Building: Y

Have Structures been improved since 2005[2]: N

The review of building permits issued for this lot is as follows:

1975: Moved per HDC file
1988: Moved on same lot
1999: Renovate entire DU (no exterior changes per application)
2005: Moved to 112 Baxter Road
2010: Move 400 sf storage shed onto lot from 97 Baxter and place on slab foundation – no plumbing
2013: Emergency demolition of garage

Was the house previously relocated landward on lot ("planned retreat"): Y

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The house was moved on the lot in 1975 and 1988. The main house moved off the lot in 2005.

There is adequate space on this lot to re-locate the house further landward from the top of Coastal Bank: N

Required Sand Contribution Volume:

Site specific Coastal Bank Retreat Rate: 4.7 ft /year (Reach 2)

Time period of retreat calculations by Epsilon Associates, Inc.: 19 years

Annual volume required to compensate for protected Coastal Bank (cy/lf (based on reach): 12.1 cy/lf

Proposed Starting Volume in Template: 22 cy/lf

Years of annual contribution available in template (22 cy/lf / annual volume)[3]: 1.8 years

DRAFT

Notes:

1. Pursuant to the By-Law Regulations a CES is allowed to protect public infrastructure from loss or damage by floodwaters [By-Law Section 2.5].
2. Pursuant to Bylaw Regulations and state regulations, a CES is allows to protect structures / buildings constructed adjacent to the Coastal Bank before August 1978 (date when state regulations became effective). Bylaw Regulations prevent use of CES to protect pre-1978 structures that were substantially improved. The Substantially improved clause was added to the Bylaw regulation in 2005. Substantial Improvement is defined in the Bylaw Regulations as cumulative expansion of habitable space greater than twenty percent (20%). [1.02]
3. Calculated by dividing the full template volume (22 cy/lf) by the required annual sand contribution (varies cy/lf/yr)

Jurisdictional Review for Protecting Existing Structures at:
101 Baxter Road

Following are the criteria reviewed to document that lots on the east side of Baxter Road are eligible for construction of a coastal engineering structure to protect existing structures on this lot, or infrastructure proximate to this lot, from loss or damage by coastal floodwaters. This is based on criteria established for Coastal Bank in the Nantucket Wetlands Protection Bylaw Regulations (Section 2.05) and the Massachusetts Wetland Protection Regulations (310 CMR 10.30). The information presented below is summarized in Table 1. Summary of Qualifications to Protect the Coastal Bank from Erosion with a CES.

<u>Criteria establishing eligibility:</u>

Coastal Dune fronting Lot: N

The Coastal Dune along the Sconset shoreline has been eroding from north to south starting in the 1970's. The dune fronting this parcel has been permanently lost.

Coastal Bank fronting the lot is eroding: N

The Coastal Bank fronting this lot was re-planted as part of the existing geotube project. Erosion has been abated by the existing geotube project and re-planting efforts.

Coastal Bank Supports Vegetation: Y

The Coastal Bank is well vegetated above the geotube system.

On vacant lots, Coastal Bank significant to protect Public Infrastructure[1]: Y

Distance of roadway from top of Coastal Bank is 35 feet. This roadway setback does meet the imminent hazard criteria (50 foot setback) established for Baxter Road.

Lot supports a pre-1978 Building[2]: N

Have Structures been improved since 2005[2]: N.A.

The review of building permits issued for this lot is as follows:

<u>1984:</u> Permit noted on file cover, but permit is not in file (work performed is not indicated)
<u>1988:</u> Moved per HDC file
<u>1989:</u> "Move" noted on file cover, but permit is not in file
<u>2001:</u> House moved to 104 Baxter (Emergency move)

Was the house previously relocated landward on lot ("planned retreat"): Y

The house was moved in 1988 and moved across the street in 2001.

There is adequate space on this lot to re-locate the house further landward from the top of Coastal Bank: N.A.

This lot is vacant.

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Required Sand Contribution Volume:

Site specific Coastal Bank Retreat Rate: 4.7 ft /year (Reach 2)

Time period of retreat calculations by Epsilon Associates, Inc.: 19 years

Annual volume required to compensate for protected Coastal Bank (cy/lf (based on reach): 12.1 cy/lf

Proposed Starting Volume in Template: 22 cy/lf

Years of annual contribution available in template (i.e., 22/ annual volume)[3]: 1.8 years

DRAFT

Notes:

1. Pursuant to the By-Law Regulations a CES is allowed to protect public infrastructure from loss or damage by floodwaters [Bylaw Section 2.5].
2. Pursuant to Bylaw Regulations and state regulations a CES is allows to protect structures / buildings constructed adjacent to the Coastal Bank before August 1978 (date when state regulations became effective). Bylaw Regulations however use of CES to protect pre-1978 structures that were substantially improved. The Substantially Improved clause was added to the Bylaw regulation in 2005. Substantial Improvement is defined in the Bylaw Regulations as cumulative expansion of habitable space greater than twenty percent (20%). [1.02]
3. Calculated by dividing the full template volume (22 cy/lf) by the required annual sand contribution (varies cy/lf/yr)

Jurisdictional Review for Protecting Existing Structures at:
105 Baxter Road

Following are the criteria reviewed to document that lots on the east side of Baxter Road are eligible for construction of a coastal engineering structure to protect existing structures on this lot, or infrastructure proximate to this lot, from loss or damage by coastal floodwaters. This is based on criteria established for Coastal Bank in the Nantucket Wetlands Protection Bylaw Regulations (Section 2.05) and the Massachusetts Wetland Protection Regulations (310 CMR 10.30). The information presented below is summarized in Table 1. Summary of Qualifications to Protect the Coastal Bank from Erosion with a CES.

<u>Criteria establishing eligibility:</u>

Coastal Dune fronting Lot: N

The Coastal Dune along the Sconset shoreline has been eroding from north to south starting in the 1970's. The dune fronting this parcel has been permanently lost.

Coastal Bank fronting the lot is eroding: N

The Coastal Bank fronting the majority of this lot was re-planted as part of the existing geotube project. Erosion has been abated by the existing geotube project and re-planting efforts.

Coastal Bank Supports Vegetation: Y

The Coastal Bank is well vegetated above the geotube system and end returns. On the northern portion of the lot the vegetative cover is less robust.

On vacant lots, Coastal Bank significant to protect Public Infrastructure[1]: Y

Distance of roadway from top of Coastal Bank is 36 feet. This roadway setback does meet the imminent hazard criteria (65-foot setback) established for Baxter Road.

Lot supports a pre-1978 Building[2]: N

Have Structures been improved since 2005[2]: N.A.

Was the house previously relocated landward on lot ("planned retreat"): Y

The review of building permits issued for this lot is as follows:

<u>1975:</u> Moved per HDC file

<u>1988:</u> Moved on same lot; add & alter (per plans, alterations appear to be new decks and lattice at large deck)

<u>1998:</u> Moved across the street to 106 Baxter

There is adequate space on this lot to re-locate the house further landward from the top of Coastal Bank: N.A.

This lot is vacant.

DRAFT

Required Sand Contribution Volume:

Site specific Coastal Bank Retreat Rate: 4.7 ft /year (Reach 2)

Time period of retreat calculations by Epsilon Associates, Inc.: 19 years

Annual volume required to compensate for protected Coastal Bank (cy/lf (based on reach): 12.1 cy/lf

Proposed Starting Volume in Template: 22 cy/lf

Years of annual contribution available in template (i.e., 22/ annual volume)[3]: 1.8 years

DRAFT

Notes:

1. Pursuant to the By-Law Regulations a CES is allowed to protect public infrastructure from loss or damage by floodwaters [Bylaw Section 2.5].
2. Pursuant to Bylaw Regulations and state regulations a CES is allows to protect structures / buildings constructed adjacent to the Coastal Bank before August 1978 (date when state regulations became effective). Bylaw Regulations however use of CES to protect pre-1978 structures that were substantially improved. The Substantially Improved clause was added to the Bylaw regulation in 2005. Substantial Improvement is defined in the Bylaw Regulations as cumulative expansion of habitable space greater than twenty percent (20%). [1.02]
3. Calculated by dividing the full template volume (22 cy/lf) by the required annual sand contribution (varies cy/lf/yr)

Jurisdictional Review for Protecting Existing Structures at:
107 Baxter Road

Following are the criteria reviewed to document that lots on the east side of Baxter Road are eligible for construction of a coastal engineering structure to protect existing structures on this lot, or infrastructure proximate to this lot, from loss or damage by coastal floodwaters. This is based on criteria established for Coastal Bank in the Nantucket Wetlands Protection Bylaw Regulations (Section 2.05) and the Massachusetts Wetland Protection Regulations (310 CMR 10.30). The information presented below is summarized in Table 1. Summary of Qualifications to Protect the Coastal Bank from Erosion with a CES.

<u>Criteria establishing eligibility:</u>

Coastal Dune fronting Lot: N

The Coastal Dune along the Sconset shoreline has been eroding from north to south starting in the 1970's. The dune fronting this parcel has been permanently lost.

Coastal Bank fronting the lot is eroding: Y

The Coastal Bank fronting this lot lacks vegetation and is comprised of erodible exposed soils from toe to top of slope. Rill erosion is observed on the bank face.

Coastal Bank Supports Vegetation: **N**

The Coastal Bank lacks vegetation.

On vacant lots, Coastal Bank significant to protect Public Infrastructure[1]: **Y**

Distance of roadway from top of Coastal Bank is 64 feet. This roadway setback does meet the imminent hazard criteria (60 foot setback) established for Baxter Road.

Lot supports a pre-1978 Building[2]: **N**

Have Structures been improved since 2005[2]: **N.A.**

Was the house previously relocated landward on lot ("planned retreat"): N.A.

This lot is vacant.

There is adequate space on this lot to re-locate the house further landward from the top of Coastal Bank: N.A.

This lot is vacant.

DRAFT

Required Sand Contribution Volume:

Site specific Coastal Bank Retreat Rate: 2.0 ft /year (Reach 1)

Time period of retreat calculations by Epsilon Associates, Inc.: 23 years

Annual volume required to compensate for protected Coastal Bank (cy/lf (based on reach): 6.8 cy/lf

Proposed Starting Volume in Template: 22 cy/lf

Years of annual contribution available in template (i.e., 22/ annual volume)[3]: 3.23 years

DRAFT

Notes:

1. Pursuant to the By-Law Regulations a CES is allowed to protect public infrastructure from loss or damage by floodwaters [Bylaw Section 2.5].
2. Pursuant to Bylaw Regulations and state regulations, a CES is allows to protect structures / buildings constructed adjacent to the Coastal Bank before August 1978 (date when state regulations became effective). Bylaw Regulations prevent use of CES to protect pre-1978 structures that were substantially improved. The Substantial improved clause was added to the Bylaw regulation in 2005. Substantial Improvement is defined in the Bylaw Regulations as cumulative expansion of habitable space greater than twenty percent (20%). [illegible]
3. Calculated by dividing the full template volume (22 cy/lf) by the required annual sand contribution (varies cy/lf/yr)

Jurisdictional Review for Protecting Existing Structures at:
107A Baxter Road

Following are the criteria reviewed to document that lots on the east side of Baxter Road are eligible for construction of a coastal engineering structure to protect existing structures on this lot, or infrastructure proximate to this lot, from loss or damage by coastal floodwaters. This is based on criteria established for Coastal Bank in the Nantucket Wetlands Protection Bylaw Regulations (Section 2.05) and the Massachusetts Wetland Protection Regulations (310 CMR 10.30). The information presented below is summarized in Table 1. Summary of Qualifications to Protect the Coastal Bank from Erosion with a CES.

<u>Criteria establishing eligibility:</u>

Coastal Dune fronting Lot: N

The Coastal Dune along the Sconset shoreline has been eroding from north to south starting in the 1970's. The dune fronting this parcel has been permanently lost.

Coastal Bank fronting the lot is eroding: Y

The Coastal Bank fronting this lot lacks vegetation and is comprised of erodible exposed soils from toe to top of slope. Rill erosion is observed on the bank face.

Coastal Bank Supports Vegetation: N

The Coastal Bank lacks vegetation.

On vacant lots, Coastal Bank significant to protect Public Infrastructure[1]: Y

Distance of roadway from top of Coastal Bank is 71 feet. This roadway setback does not meet the imminent hazard criteria (65-foot setback) established for Baxter Road.

Lot supports a pre-1978 Building[2]: N

Have Structures been improved since 2005[2]: N.A.

Was the house previously relocated landward on lot ("planned retreat"): N.A.

This lot is vacant.

There is adequate space on this lot to re-locate the house further landward from the top of Coastal Bank: N.A.

This lot is vacant.

DRAFT

Required Sand Contribution Volume:

Site specific Coastal Bank Retreat Rate: 2.0 ft /year (Reach 1)

Time period of retreat calculations by Epsilon Associates, Inc.: 23 years

Annual volume required to compensate for protected Coastal Bank (cy/lf (based on reach): 6.8 cy/lf

Proposed Starting Volume in Template: 22 cy/lf

Years of annual contribution available in template (i.e., 22/ annual volume)[3]: 3.2 years

DRAFT

Notes:

1. Pursuant to the By-Law Regulations a CES is allowed to protect public infrastructure from loss or damage by floodwaters [Bylaw Section 2.5].
2. Pursuant to Bylaw Regulations and state regulations, a CES is allows to protect structures / buildings constructed adjacent to the Coastal Bank before August 1978 (date when state regulations became effective). Bylaw Regulations prevent use of CES to protect pre-1978 structures that were substantially improved. The Substantial improved clause was added to the Bylaw regulation in 2005. Substantial Improvement is defined in the Bylaw Regulations as cumulative expansion of habitable space greater than twenty percent (20%). [illegible]
3. Calculated by dividing the full template volume (22 cy/lf) by the required annual sand contribution (varies cy/lf/yr)

Jurisdictional Review for Protecting Existing Structures at:
109 Baxter Road

Following are the criteria reviewed to document that lots on the east side of Baxter Road are eligible for construction of a coastal engineering structure to protect existing structures on this lot, or infrastructure proximate to this lot, from loss or damage by coastal floodwaters. This is based on criteria established for Coastal Bank in the Nantucket Wetlands Protection Bylaw Regulations (Section 2.05) and the Massachusetts Wetland Protection Regulations (310 CMR 10.30). The information presented below is summarized in Table 1. Summary of Qualifications to Protect the Coastal Bank from Erosion with a CES.

<u>Criteria establishing eligibility:</u>

Coastal Dune fronting Lot: N

The Coastal Dune along the Sconset shoreline has been eroding from north to south starting in the 1970's. The dune fronting this parcel has been permanently lost.

Coastal Bank fronting the lot is eroding: Y

The Coastal Bank fronting this lot lacks vegetation and is comprised of erodible exposed soils from toe to top of slope. Rill erosion is observed on the bank face.

Coastal Bank Supports Vegetation: N

The Coastal Bank lacks vegetation.

On vacant lots, Coastal Bank significant to protect Public Infrastructure[1]: N

This lot contains a house. Distance of house from top of Coastal Bank is 19 feet. This house setback meets the imminent hazard criteria (40-foot setback) established for houses on Baxter Road.

Lot supports a pre-1978 Building: Y

There has been a house on this lot since 1940.

Have Structures been improved since 2005[2]: N

The building department building permit records show there have been no improvements since 1996. The review of building permits issued for this lot is as follows:

<u>1996:</u> Renovate 1st floor 1,012 sf, basement 980 sf, rec room, bath, storage, add 450 sf of 2nd floor 2 bedroom, bath – 1 dwelling unit

<u>1988:</u> Alter and repair dwelling.

<u>1988:</u> Moved from "Lot A to Lot B"/111 Baxter Road (109 & 111 were combined)

Was the house previously relocated landward on lot ("planned retreat"): Y

The house was moved landward in 1988.

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There is adequate space on this lot to re-locate the house further landward from the top of Coastal Bank: N

The house was moved as far west as possible, and is now right along the Baxter Road right of way.

Required Sand Contribution Volume:

Site specific Coastal Bank Retreat Rate: 2.0 ft /year (Reach 1)

Time period of retreat calculations by Epsilon Associates, Inc.: 23 years

Annual volume required to compensate for protected Coastal Bank (cy/lf (based on reach): 6.8 cy/lf

Proposed Starting Volume in Template: 22 cy/lf

Years of annual contribution available in template (i.e., 22 / annual volume)[3]: 3.2 years

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Notes:

1. Pursuant to the By-Law Regulations a CES is allowed to protect public infrastructure from loss or damage by floodwaters [Bylaw Section 2.5].
2. Pursuant to Bylaw Regulations and State regulations, a CES is allows to protect structures / buildings constructed adjacent to the Coastal Bank before August 1978 (date when state regulations became effective). Bylaw Regulations prevent use of CES to protect pre-1978 structures that were substantially improved. The Substantially improved clause was added to the Bylaw regulation in 2005. Substantial Improvement is defined in the Bylaw Regulations as cumulative expansion of habitable space greater than twenty percent (20%). [1.02]
3. Calculated by dividing the full template volume (22 cy/lf) by the required annual sand contribution (varies cy/lf/yr)

Jurisdictional Review for Protecting Existing Structures at:
113 Baxter Road

Following are the criteria reviewed to document that lots on the east side of Baxter Road are eligible for construction of a coastal engineering structure to protect existing structures on this lot, or infrastructure proximate to this lot, from loss or damage by coastal floodwaters. This is based on criteria established for Coastal Bank in the Nantucket Wetlands Protection Bylaw Regulations (Section 2.05) and the Massachusetts Wetland Protection Regulations (310 CMR 10.30). The information presented below is summarized in Table 1. Summary of Qualifications to Protect the Coastal Bank from Erosion with a CES.

Criteria establishing eligibility:

Coastal Dune fronting Lot: N

The Coastal Dune along the Sconset shoreline has been eroding from north to south starting in the 1970's. The dune fronting this parcel has been permanently lost.

Coastal Bank fronting the lot is eroding: Y

The Coastal Bank fronting this lot lacks vegetation and is comprised of erodible exposed soils from toe to top of slope. Rill erosion is observed on the bank face.

Coastal Bank Supports Vegetation: N

The Coastal Bank lacks vegetation.

On vacant lots, Coastal Bank significant to protect Public Infrastructure[1]: N

This lot contains a house. Distance of house from top of Coastal Bank is 23 feet. This house setback meets the imminent hazard criteria (40-foot setback) established for houses on Baxter Road.

Lot supports a pre-1978 Building: Y

There has been a house on this lot since 1940.

Have Structures been improved since 2005[2]: N

The building department building permit records show there have been no improvements to this house. It was relocated on the same lot in 1998.

Was the house previously relocated landward on lot ("planned retreat"): Y

The house was moved landward in 1988.

There is adequate space on this lot to re-locate the house further landward from the top of Coastal Bank: N

The house was moved as far west as possible, and is now right along the Baxter Road right of way.

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Required Sand Contribution Volume:

Site specific Coastal Bank Retreat Rate: 2.0 ft /year (Reach 1)

Time period of retreat calculations by Epsilon Associates, Inc.: 23 years

Annual volume required to compensate for protected Coastal Bank (cy/lf (based on reach): 6.8 cy/lf

Proposed Starting Volume in Template: 22 cy/lf

Years of annual contribution available in template (i.e., 22/ annual volume)[3]: 3.2 years

DRAFT

Notes:

1. Pursuant to the By-Law Regulations a CES is allowed to protect public infrastructure from loss or damage by floodwaters [Bylaw Section 5].
2. Pursuant to Bylaw Regulations and state regulations, a CES is allows to protect structures / buildings constructed adjacent to the Coastal Bank before August 1978 (date when state regulations became effective). Bylaw regulations prevent use of CES to protect pre-1978 structures that were substantially improved. The Substantially improved clause was added to the Bylaw regulation in 2015. Substantial Improvement is defined in the Bylaw Regulations as cumulative expansion of habitable space greater than twenty percent (20%). [1.02]
3. Calculated by dividing the full template volume (22 cy/lf) by the required annual sand contribution (varies cy/lf/yr)

Jurisdictional Review for Protecting Existing Structures at:
115 Baxter Road

Following are the criteria reviewed to document that lots on the east side of Baxter Road are eligible for construction of a coastal engineering structure to protect existing structures on this lot, or infrastructure proximate to this lot, from loss or damage by coastal floodwaters. This is based on criteria established for Coastal Bank in the Nantucket Wetlands Protection Bylaw Regulations (Section 2.05) and the Massachusetts Wetland Protection Regulations (310 CMR 10.30). The information presented below is summarized in Table 1. Summary of Qualifications to Protect the Coastal Bank from Erosion with a CES.

Criteria establishing eligibility:

Coastal Dune fronting Lot: N

The Coastal Dune along the Sconset shoreline has been eroding from north to south starting in the 1970's. The dune fronting this parcel has been permanently lost.

Coastal Bank fronting the lot is eroding: Y

The Coastal Bank fronting this lot lacks vegetation and is comprised of erodible exposed soils from toe to top of slope. Rill erosion is observed on the bank face.

Coastal Bank Supports Vegetation: **N**

The Coastal Bank lacks vegetation

On vacant lots, Coastal Bank significant to protect Public Infrastructure[1]: N

Lot supports a pre-1978 Building[2]: **Y**

Have Structures been improved since 2005[2]**: N** The parcel as now configured is comprised of parcel 48-7 and 48-9, with the structure on 48-10 retained on the property and re-located landward in the spring of 2020. Building Department records for the structure are as follows:

1983: Structural repairs, new deck, interior renovation
1987: Alter and renovate, raise roof, new windows & doors
1988: 2nd floor addition, window & door changes
1988: Relocate house on same lot, add steps and sewer
2020: Relocated structure landward on the property

Was the house previously relocated landward on lot ("planned retreat"): Y

The structure was moved landward in 1988 and again in 2020

There is adequate space on this lot to re-locate the house further landward from the top of Coastal Bank: N

The recent move locates this house as far away from the top of Coastal Bank as possible.

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Required Sand Contribution Volume:

Site specific Coastal Bank Retreat Rate: 2.0 ft /year (Reach 1)

Time period of retreat calculations by Epsilon Associates, Inc.: 23 years

Annual volume required to compensate for protected Coastal Bank (cy/lf (based on reach): 6.8 cy/lf

Proposed Starting Volume in Template: 22 cy/lf

Years of annual contribution available in template (i.e., 22 cy/lf annual volume)[3]: 3.2 years

DRAFT

Notes:

1. Pursuant to the By-Law Regulations a CES is allowed to protect public infrastructure from loss or damage by floodwaters [Bylaw Section 2.3
2. Pursuant to Bylaw Regulations and state regulations a CES is allows to protect structures / buildings constructed adjacent to the Coastal Bank before August 1978 (date when state regulations became effective). Bylaw Regulations prevent use of CES to protect pre-1978 structures that were substantially improved. The Substantially improved clause was added to the Bylaw regulation in 2005. Substantial Improvement is defined in the Bylaw Regulations as cumulative expansion of habitable space greater than twenty percent (20%). [1.02]
3. Calculated by dividing the full template volume (22 cy/lf) by the required annual sand contribution (varies cy/lf/yr)

Jurisdictional Review for Protecting Existing Structures at:
119 Baxter Road

Following are the criteria reviewed to document that lots on the east side of Baxter Road are eligible for construction of a coastal engineering structure to protect existing structures on this lot, or infrastructure proximate to this lot, from loss or damage by coastal floodwaters. This is based on criteria established for Coastal Bank in the Nantucket Wetlands Protection Bylaw Regulations (Section 2.05) and the Massachusetts Wetland Protection Regulations (310 CMR 10.30). The information presented below is summarized in Table 1. Summary of Qualifications to Protect the Coastal Bank from Erosion with a CES.

Criteria establishing eligibility:

Coastal Dune fronting Lot: N

The Coastal Dune along the Sconset shoreline has been eroding from north to south starting in the 1970's. The dune fronting this parcel has been permanently lost.

Coastal Bank fronting the lot is eroding: Y

The Coastal Bank fronting this lot lacks vegetation and is comprised of erodible exposed soils from toe to top of slope. Rill erosion is observed on the bank face.

Coastal Bank Supports Vegetation: N

The Coastal Bank lacks vegetation.

On vacant lots, Coastal Bank significant to protect Public Infrastructure[1]: Y

Distance of road from top of Coastal Bank is 79 feet. This roadway setback does not meet imminent hazard criteria (65-foot setback) established for Baxter Road.

Lot supports a pre-1978 Building[2]: N

Have Structures been improved since 2005[2]: N.A.

Was the house previously relocated landward on lot ("planned retreat"): N.A.

This lot is currently vacant. The house was moved in 1987 to 82 Baxter.

There is adequate space on this lot to re-locate the house further landward from the top of Coastal Bank: N.A.

This lot is vacant.

Required Sand Contribution Volume:

Site specific Coastal Bank Retreat Rate: 2.0 ft /year (Reach 1)

DRAFT

Time period of retreat calculations by Epsilon Associates, Inc.: 23 years

Annual volume required to compensate for protected Coastal Bank (cy/lf (based on reach): 6.8 cy/lf

Proposed Starting Volume in Template: 22 cy/lf

Years of annual contribution available in template (i.e., 22/ annual volume)[3]: 3.2 years

Notes:

1. Pursuant to the By-Law Regulations a CES is allowed to protect public infrastructure from loss or damage by floodwaters [Bylaw Section 2.5].
2. Pursuant to Bylaw Regulations and state regulations, a CES is allows to protect structures / buildings constructed adjacent to the Coastal Bank before August 1978 (date when state regulations became effective). Bylaw Regulations prevent use of CES to protect pre-1978 structures that were substantially improved. The Substantially improved clause was added to the Bylaw regulation in 2005. Substantial Improvement is defined in the Bylaw Regulations as cumulative expansion of habitable space greater than twenty percent (20%). [1.2]
3. Calculated by dividing the full template volume (22 cy/lf) by the required annual sand contribution (varies cy/lf/yr)

DRAFT

Attachment F

NHESP Correspondence

DRAFT

MASSWILDLIFE

DIVISION OF
FISHERIES & WILDLIFE

1 Rabbit Hill Road, Westborough, MA 01581
p: (508) 389-6300 | f: (508) 389-7890
MASS.GOV/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**
Town: **Nantucket**
Project Description: **Expanded Baxter Road and Sconset Bluff Storm Damage Prevention Project; Coastal Bank Stabilization with Geotextile Bags and Nourishment**
Wetlands File No.: **048-3115 (associated with 048-3081)**
NHESP Tracking No.: **13-32415**

DRAFT

Dear Commissioners and Applicant:

On January 9, 2018 the Natural Heritage and Endangered Species Program of the Division of Fisheries and Wildlife (Division) received a Notice of Intent (NOI) and other information from the Applicant pursuant to the rare wildlife species provisions of the Massachusetts Wetlands Protection Act (WPA) and its implementing regulations (310 CMR 10.37) and the Massachusetts Endangered Species Act (MESA) (M.G.L. c. 131A) and its implementing regulations (321 CMR 10.18). In a letter issued February 8 2018 the Division determined that the NOI and MESA application were incomplete. Supplemental information prepared by Epsilon Associates, Inc. dated July 11, 2018, December 3, 2018, December 26, 2018, January 10, 2019 and February 8, 2019 (including site plans, 6 sheets dated 02/08/2019) have been provided to the Division for review pursuant to the WPA (310 CMR 10.37) and the MESA (321 CMR 10.18).

The Division has determined that the proposed project is located within the mapped *Priority* and *Estimated Habitat* of Piping Plover (*Charadrius melodus*) and Least Tern (*Sternula antillarum*), species state-listed as "Threatened" and "Special Concern," respectively. These species and their habitats are protected pursuant to the WPA and the MESA. Fact sheets for state-listed species can be found at www.mass.gov/nhesp. The Piping Plover is also federally protected as a "Threatened" species pursuant to the U.S. Endangered Species Act (ESA, 50 CFR 17.11).

The purpose of the Division's review of the proposed project under the WPA regulations is to determine whether the project will have any adverse effects on the Resource Areas Habitats of state-listed species. The purpose of the Division's review under the MESA regulations is to determine whether a Take of state-listed species will result from the proposed project.

The Project, as currently proposed, will result in the installation of ±2,873 linear feet of geotextile sand-filled tubes extending both northerly and southerly from the existing ±947 linear feet (resulting in a total length of ±3,820 linear feet) of geotextile sand-filled stabilization. According to the Notice of Intent, the geotubes will occupy 67,000 square feet of Costal Beach and temporarily impact an additional 105,000 square feet for construction (temporary trench). The northern section of the proposed stabilization includes the properties with addresses 105 – 122 Baxter Road. The southern section of the proposed stabilization includes the properties with addresses of 55 – 87 Baxter Road. The Coastal Bank along many of the properties is eroding.

WETLANDS PROTECTION ACT (WPA) & MASSACHUSETTS ENDANGERED SPECIES ACT (MESA)

Based on the information provided and the information contained in our database, it is the opinion of the Division that the project, as currently proposed, **must be conditioned in order to avoid adverse effects** to the Resource Area Habitats of state-listed wildlife species (310 CMR 10.37) and **must be conditioned in order to avoid a prohibited Take** of state-listed species (321 CMR 10.18(2)(a)). The following conditions must be met:

1) **Construction Conditions**.

   a. All work, including all access locations (e.g. Hoic[illegible] Hollow), located within Priority Habitat is prohibited during the period **April 1 – August 31**, unless a monitoring and protection plan for state-listed species has been approved in writing by the Division.

   b. If additional Coastal Bank erosion occurs prior to the start of work, to the extent practicable, the geotube system should be shifted landward to account for the loss of Coastal Bank. Constructing the geotube system as close to the toe/bottom of the Coastal Bank existing at the time of construction and thence landward, should serve to reduce impacts on the Coastal Beach.

2) **Nourishment.** To reduce end[illegible] and impacts to the Coastal Dune located within Priority Habitat, prior to the start of work, a nourishment plan that enhances or maintains Coastal Dune shall be submitted to the Division for review and written approval.

3) **State-listed Species Protection**. The Applicant has the responsibility of protecting breeding Piping Plovers and state-listed species of terns that may be on this section of beach. Therefore, the Applicant must allow regular monitoring for the presence of Piping Plovers and terns by a qualified shorebird monitor, as determined by the Division, during the period April 1 – August 31 and shall allow any nests, scrapes, or unfledged chicks to be protected with symbolic fencing (warning signs and twine fencing).

4) **55 Baxter Road.** Coastal Dune is present at this location. Therefore, prior to the extension of geotubes on this property, the applicant shall submit the following documentation:

   a. **Site Plan.** Provide plans prepared by a registered engineer (with stamp and signature) that includes site specific survey and topographic information, wetland Resource Area delineation, existing profiles and proposed profiles depicting the proposed geotextile stabilization and clearly demarcated limit of work.

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b. **Resource Area Information.** Provide documentation with photos of the condition of the Coastal Bank and Coastal Dune with updated calculations for Resource Area impacts at the time for which stabilization of the properties is proposed and/or documentation that this Resource Area is no longer present within the proposed stabilization footprint.

5) **Compliance Report**: Within sixty (60) days of completion of work, the Applicant shall submit as-built site plans and a brief written report including photographs showing final constructed conditions with particular emphasis on demonstrating compliance with the Conditions herein.

6) **Authorization Duration**. This authorization is valid for 5 years from the date of issuance and limited to the project described herein.

7) **Notice.** Upon filing for renewal, extension, or amendment of the Orders of Conditions, the applicant shall contact the Division for written response regarding impacts to Resource Area habitat of state-listed wildlife.

Provided these conditions are included in any approving Order 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. A copy of the final Order of Conditions shall be sent to the NHESP simultaneously with the applicant as stated in the Procedures section of the WPA (310 CMR 10.05(6)(e)).

We note that all work is subject to the anti-segmentation provisions (321 CMR 10.16) of the MESA. This determination is a final decision of the Division of Fisheries and Wildlife pursuant to 321 CMR 10.18. Any changes to the proposed project or additional work beyond that shown on the site plans may require an additional filing with the Division pursuant to the MESA. This determination is valid for five years. This project may be subject to further review if no physical work is commenced within five years from the date of issuance, or if there is a change to the project.

Please note that this determination addresses only the matter of state-listed species and their habitats. If you have any questions regarding this letter please contact Amy Hoenig, Endangered Species Review Biologist, at (508) 389-6364.

DRAFT

Sincerely,

Thomas W. French

Thomas W. French, Ph.D.
Assistant Director

cc: MA DEP Southeast Region
Dwight Dunk, Epsilon Associates, Inc.

Attachment G

Compensatory Sand Analysis Protocol

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BAXTER ROAD AND SCONSET BLUFF STABILIZATION AND COASTAL RESILIENCY PROJECT
COMPENSATORY SAND ANALYSIS PROTOCOL

Introduction

This protocol was developed for use In the Baxter Road and Sconset Bluff Stabilization and Coastal Resiliency Project. It augments and is based on sand requirements established in the prior Order of Conditions (DEP File No SE48-2824), specifically Special Condition No. 25 which reads:

> "*25. All sand used for mitigation or to fill and cover the Geotubes shall be imported from an off-site source and shall be compatible with the existing bank and beach sediments*."

This protocol is proposed for sand sourced and delivered to the template to confirm it is compatible with the existing bank and beach sediments based on grain size. Sources that are not considered to be compatible will not be sourced for use on the template.

This protocol follows the overall approach outlined by the Massachusetts Department of Environmental Protection ("MassDEP") for determining compatibility of sediment for beach nourishment projects in the document titled, *Beach Nourishment-MassDEP's Guide to Best Management Practices for Projects in Massachusetts*, dated March 2007. Sediment analysis protocols in the MassDEP guidance is based on MassDEP regulations 314 CMR 9.07, which prescribes a stepwise process to evaluate sediment quality:

1. Conduct a site due diligence review to demonstrate that the source site is unlikely to contain anthropogenic concentrations of oil or hazardous materials.

2. Conduct sieve analysis of source sand. If source sand contains less than 10% by weight of particles passing the No. 200 U.S. Standard Series Testing Sieve (nominal opening 0.0029 inches), and if the "due diligence" review demonstrates that the source site is unlikely to contain anthropogenic concentrations of oil or hazardous materials, then no chemical testing is required.

3. If due diligence suggests sand may be contaminated and/or fines comprise 10% or more of the sample by weight, then conduct chemical analysis of source sand. For sources supplying up to 10,000 cubic yards of sand, one sample per 1,000 c.y. shall be collected for laboratory analysis[1].

Sand Analysis to Determine Compatibility

Following that stepwise process, the Sconset Beach Preservation Fund ("SBPF") proposes the following sand analysis protocol for sand sourced from commercial sand pits (either on-Island or off-Island sand pits), as well as on-Island excavation sites. Results of the sand compatibility analysis will be submitted to the Nantucket Natural Resources Department for review and acceptance before sand is placed on the template.

Commercial Sand Pits (On-Island and Off-Island)

Sand from commercial sand pits is considered to be free of anthropogenic concentrations of oil and other

[1] Consistent with 314 CMR 9.07 (2)(b)4

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hazardous materials. Sand sieve analysis will be required from the sand pit operator and will be compared to the beach and bluff sediment grains to determine compatibility. Sand that is similar to, or coarser than, the sand samples previously collected and analyzed by Dr. Peter Rosen will be accepted for use on the template.

On-Island Excavation Sites

The following stepwise assessment will be followed for on-Island excavation sites.

Due Diligence:

For each sand source excavation site SBPF will use an EDR Radius Map Review[2] to determine if the site has the potential to be contaminated from anthropogenic sources. The EDR Radius Map Review searches over 1,600 environmental databases, including state, city and tribal sources and it meets Environmental Site Assessment ("ESA") Phase 1 requirements and ASTM E1527-13 standards for ESA Phase 1 assessments.

Additionally, SBPF will determine if the source site is served by municipal sewer or has an on-site septic system. No sand will be accepted from a septic system leach field if sourced from a parcel served by a septic system

Excavation sites considered unlikely to contain anthropogenic concentrations of oil or hazardous materials based on the EDR radius Map Review will be considered acceptable for use.

Excavation sites that are likely to contain anthropogenic concentrations of oil or hazardous materials based on the EDR radius Map Review will either be:

a) not accepted for use on the template, or

b) be sent for chemical testing in accordance with the parameters established in 314 CMR 9.07(2)(

Sieve Analysis:

Consistent with current practice, sand samples from on-Island excavation sites will be collected and submitted to an accredited laboratory for dry sieve analysis. Compatibility will be determined by grain size only. Compatibility will be assessed for consistency with natural bank and beach sediments, plus the MassDEP guidance in which sand is considered compatible when the sand sample is similar to or coarser than the bank and beach sediments. The baseline bank and beach samples against which sand gradation will be compared are the sand sample results previously collected, analyzed, and reported by Dr. Peter Rosen.

Reporting

Results of the sand compatibility analysis will be submitted to the Nantucket Natural Resources Department for review and acceptance before sand is placed on the template.

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[2] https://edrnet.com/prods/edr-radius-map-report-geocheck/

Attachment H

Blank Data Collection Forms

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Storm Report
Baxter Road and Siasconset Bluff Stabilization Project

If the template work is being done in response to a storm that does not require a separate "Major Storm Report," please fill out the following sections.

Storm Date:	*Enter date in the format Month, dd, yyyy*
Post-Storm Inspection Date/Time:	*Enter date in the format Month, dd, yyyy*
Inspector:	*Enter inspectors name here*

Template loss:	Using geometric calculations based on the dimensions of the exposed geotubes, it is estimated that approximately x.xx cy/linear feet of sand was contributed from the structure during the storm xxx LF x.xx cy = x,xxx cy).
Adjacent Bluff Loss:	Approximately x' of bluff to the north and x' of bluff to the south of the project was lost.
Estimated Beach Level in Front of the Seaward Geotextile Tube:	Bottom of the second geotube (approximately +/- x.x' MLW)
Location(s) of Exposed Geotextile	xx of the second tier on the northern end was exposed
Need for Repair?	*Enter response here*
Condition of Ends/ Observation of Flanking?	*Enter response here*
Proposed Template Action (Re-grade and/or Replenish)	*Enter response here*
Last Maintenance Performed:	*Enter date in the format mm/dd/yyyy*
Last storm event:	*Enter date in the format mm/dd/yyyy*

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Template Measurements:

Pre-grading template width:

North end ramp:	xx'	700 ft.:	xx'
North end:	xx'	800 ft.:	xx'
100 ft.:	xx'	900 ft.:	xx'
200 ft.:	xx'	South end ramp:	xx'
300 ft.:	xx'		
400 ft.:	xx'		
500 ft.:	xx'		
600 ft.:	xx'		

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Photographic Attachments:

SBPF CHECK LIST

Report Inspection Date: **DATE**
Inspector: NAME

Inspection Item	**Status**	**Comment**
Condition of Baxter Rd. fence		
Condition of posts/chains at entry and bluff face		
Condition of parking signage		
Condition of educational signs		
Inspect bluff face for abandoned pipes/lines		
Condition of posts/chain at Hoicks Hollow		
Condition of rope railing at beach access		
Inspect Hoicks Hollow access for trash		
Inspect tube structure		
Verify beach is walkable in front of project		

Notes & Action Items:

Inspection Report Me[illegible]s:
Wind Speed:
Wind Direction:
Photo taken at:
High Tide on:
NOAA data link:

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Sand Template Work Report
Baxter Road and Sciasconset Bluff Stabilization Project

Author:	
Date:	
Proposed Template Action: (Re-grade and/or Replenish)	
Cause for Template Work: (Storm, Periodic Maintenance, etc.)	
Pre-Work/Storm Template Condition: (Describe condition of ramps, ends, and face of geotubes. Prior to work, attach photographs from the 6 photo locations and template measurements.)	
Template Work Description: (Provide dates of work, length of template re-graded, volume of sand added, etc. After work is completed, attach photographs from the 6 photo locations and template measurements.)	

DRAFT

If the template work is being done in response to a storm that does not require a separate "Major Storm Report," please fill out the following sections.

Storm Date:	
Post-Storm Inspection Date/Time:	
Inspector:	
Template loss:	

Adjacent Bluff Loss:	
Estimated Beach Level in Front of the Seaward Geotextile Tube:	
Location(s) of Exposed Geotextile	
Need for Repair?	
Condition of Ends/ Observations of Flanking?	
Proposed Template Action (Re-grade and/or Replenish)	
Last Maintenance Performed:	
Last storm event:	

DRAFT

Template Measurements:

North end ramp: '	700 ft: '
North End: '	800 ft.: '
100 ft.: '	900 ft.: '
200 ft.: '	South end ramp:
300 ft.: '	
400 ft.: '	
500 ft.: '	
600 ft.: '	

Post-grading template width:

North end ramp: '	700 ft.: '
North End: '	800 ft.: '
100 ft.: '	900 ft.: '
200 ft.: '	South end ramp:
300 ft.: '	
400 ft.: '	
500 ft.: '	
600 ft.: '	

Post-grading template height:

Photograph Attachments:

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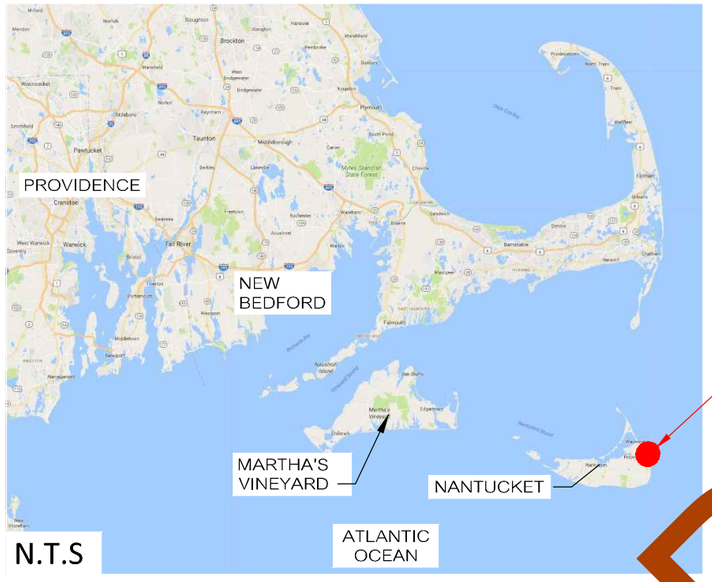
DRAFT

Attachment I

Project Plans

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BAXTER ROAD & SCONSET BLUFF STABILIZATION
AND COASTAL RESILIENCY PROJECT
PERMIT DRAWINGS





VICINITY MAP

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FOR PERMIT USE ONLY
NOT FOR CONSTRUCTION

PREPARED FOR:

TOWN OF NANTUCKET, MASS. INCORPORATED 1671

PURPOSE: BLUFF STABILIZATION

DATUM: NAD83

ADJACENT PROPERTY OWNERS: SEE APPLICATION

AGENT: EPSILON ASSOCIATES, INC.

PREPARED BY:

Baird.
W.F. Baird & Associates
Coastal Engineers Ltd.
2924 MARKETPLACE DRIVE, SUITE 200
MADISON, WI USA 53719

BAXTER ROAD & SCONSET BLUFF STABILIZATION
AND COASTAL RESILIENCY PROJECT
PERMIT DRAWINGS

SCONSET BEACH
COUNTY OF NANTUCKET
STATE OF MASSACHUSETTS

PO BOX 2279
NANTUCKET, MA 02554

DATE: 2022-10-26

12716 - C - 000



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GENERAL NOTES

1. CONTOURS ARE DERIVED FROM THE JUNE 2021 LIDAR SURVEY.
2. ELEVATIONS ARE IN FEET AND ARE REFERENCED TO MLW '92.
3. GEOTUBES TO BE FIELD FIT TO MINIMIZE EXCAVATION.

NORTH

0 150 300 600

GRAPHIC SCALE FEET

PH	REV	DESCRIPTION	DRN	DSN	APR	QCM	YYYY-MM-DD
C	A	FOR PERMIT	BKC	GCT			2022-10-26

REVISIONS

(PH) PHASE OF ISSUE: (A) PRELIMINARY (B) DESIGN (C) PERMIT (D) TENDER (E) CONSTRUCTION (F) RECORD

PREPARED FOR:

PREPARED BY: Baird.

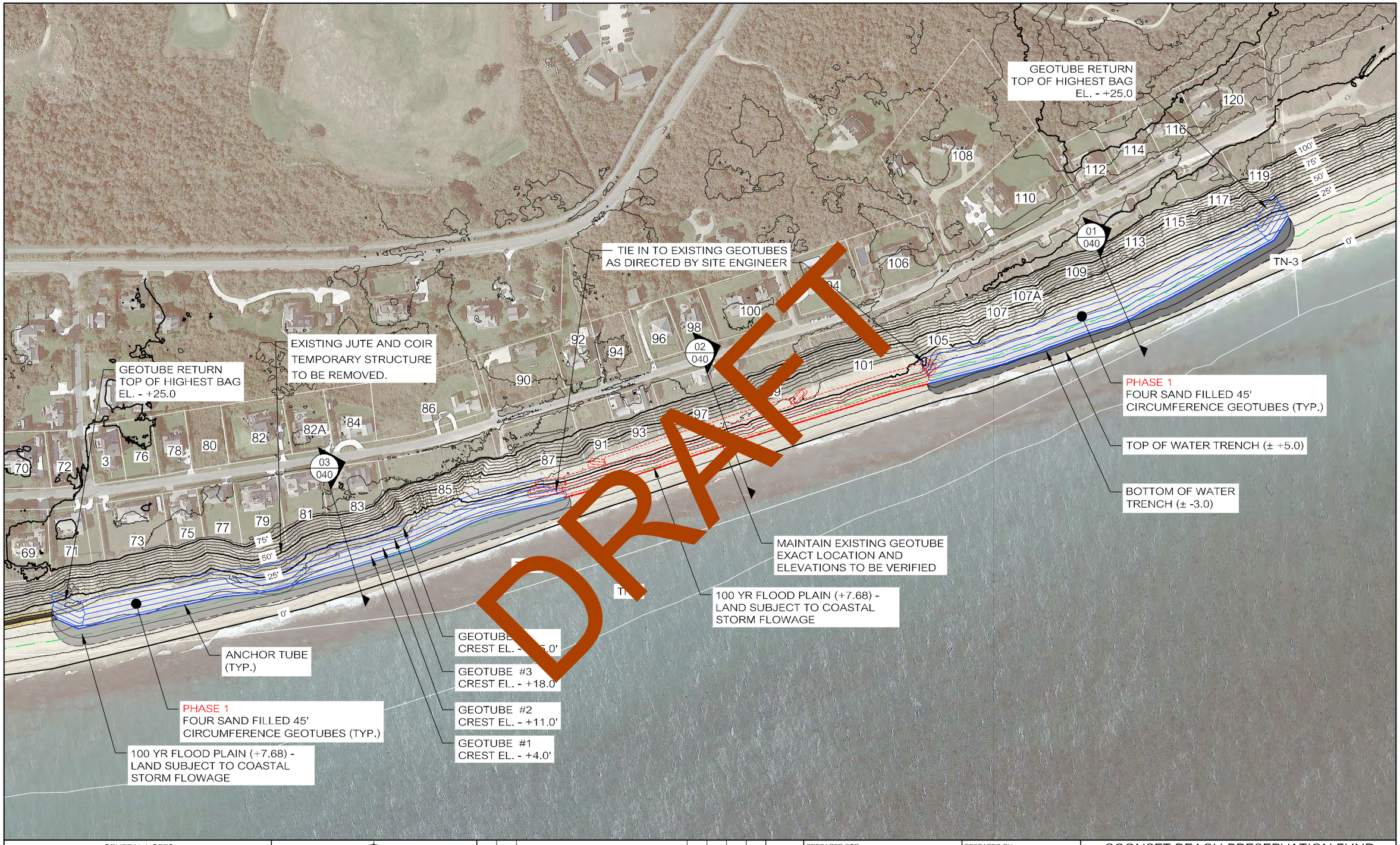
SCONSET BEACH PRESERVATION FUND

EXISTING CONDITIONS

DRAWING NUMBER: 12643.201 C 020 REV. A

G:\Projects\12643.201\Engineering\Drawings\Coastal\12643.201_Coastal_Existing_Conditions.dwg

Date Plotted: 10/25/2022 3:57:04 PM



GENERAL NOTES

1. CONTOURS ARE DERIVED FROM THE JUNE 2021 LIDAR SURVEY.
2. ELEVATIONS ARE IN FEET AND ARE REFERENCED TO MLW '92.
3. GEOTUBES TO BE FIELD FIT TO MINIMIZE EXCAVATION.

NORTH

0 100 200 400

GRAPHIC SCALE FEET

C	A	FOR PERMIT	BKC	GCT			2022-10-26
PH	REV	DESCRIPTION	DRN	DSN	APR	QCM	YYYY-MM-DD

REVISIONS

(PH) PHASE OF ISSUE: (A) PRELIMINARY (B) DESIGN (C) PERMIT (D) TENDER (E) CONSTRUCTION (F) RECORD

PREPARED FOR:

PREPARED BY:

Baird.

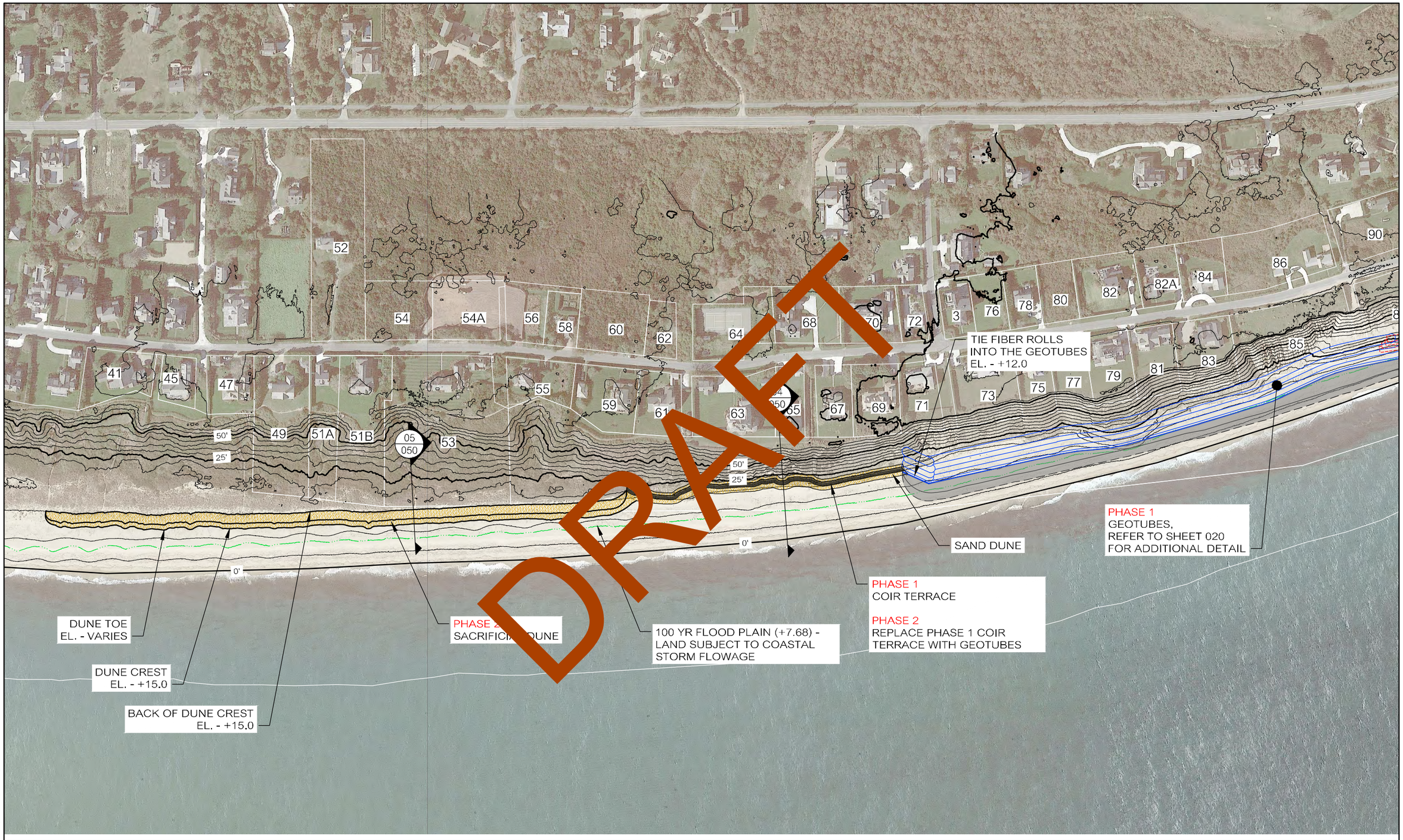
SCONSET BEACH PRESERVATION FUND

PROPOSED PLANVIEW

DRAWING NUMBER: 12643.201 C 020

REV. A

Date Plotted: 10-25-2022 15:09 TM



DRAFT

GENERAL NOTES

1. CONTOURS ARE DERIVED FROM THE JUNE 2021 LIDAR SURVEY.
2. ELEVATIONS ARE IN FEET AND ARE REFERENCED TO MLW '92.
3. GEOTUBES TO BE FIELD FIT TO MINIMIZE EXCAVATION.

NORTH

0 100 200 400

GRAPHIC SCALE FEET

PH	REV	DESCRIPTION	DRN	DSN	APR	QCM	YYYY-MM-DD
C	A	FOR PERMIT	BKC	GCT			2022-10-26

REVISIONS

(PH) PHASE OF ISSUE: (A) PRELIMINARY (B) DESIGN (C) PERMIT (D) TENDER (E) CONSTRUCTION (F) RECORD

PREPARED FOR:

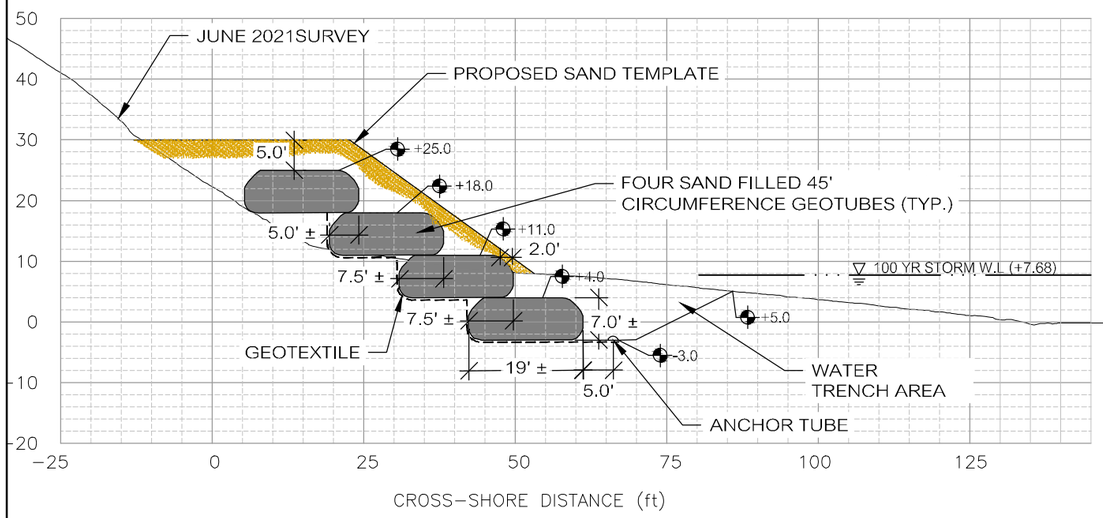
PREPARED BY: Baird.

SCONSET BEACH PRESERVATION FUND

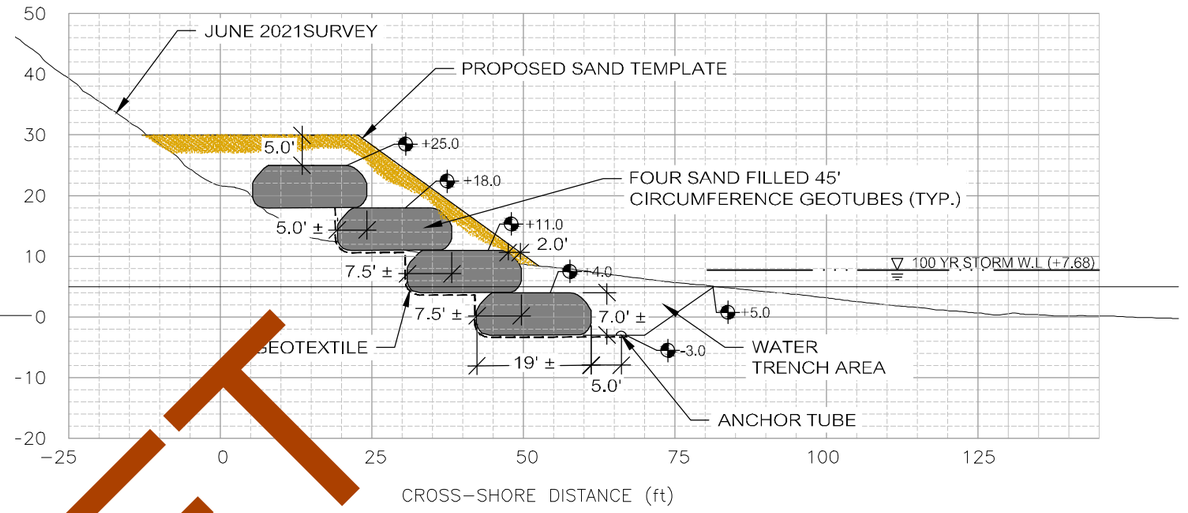
PROPOSED PLANVIEW

DRAWING NUMBER: 12643.201 C 030 REV. A

Date Plotted: 10-25-2022 3:51:14 PM



01/020 TYPICAL GEOTUBE SECTION



03/040 TYPICAL GEOTUBE SECTION



02/020 TYPICAL EXISTING CONDITIONS GEOTUBE SECTION

DRAFT

GENERAL NOTES

1. ELEVATIONS ARE REFERENCED TO MLW '92.

0 12.5 25 50
GRAPHIC SCALE FEET

PH	REV	DESCRIPTION	DRN	DSN	APR	QCM	YYYY-MM-DD
C	A	FOR PERMIT	BKC	GCT			2022-10-26

REVISIONS

(PH) PHASE OF ISSUE: (A) PRELIMINARY (B) DESIGN (C) PERMIT (D) TENDER (E) CONSTRUCTION (F) RECORD

PREPARED FOR:

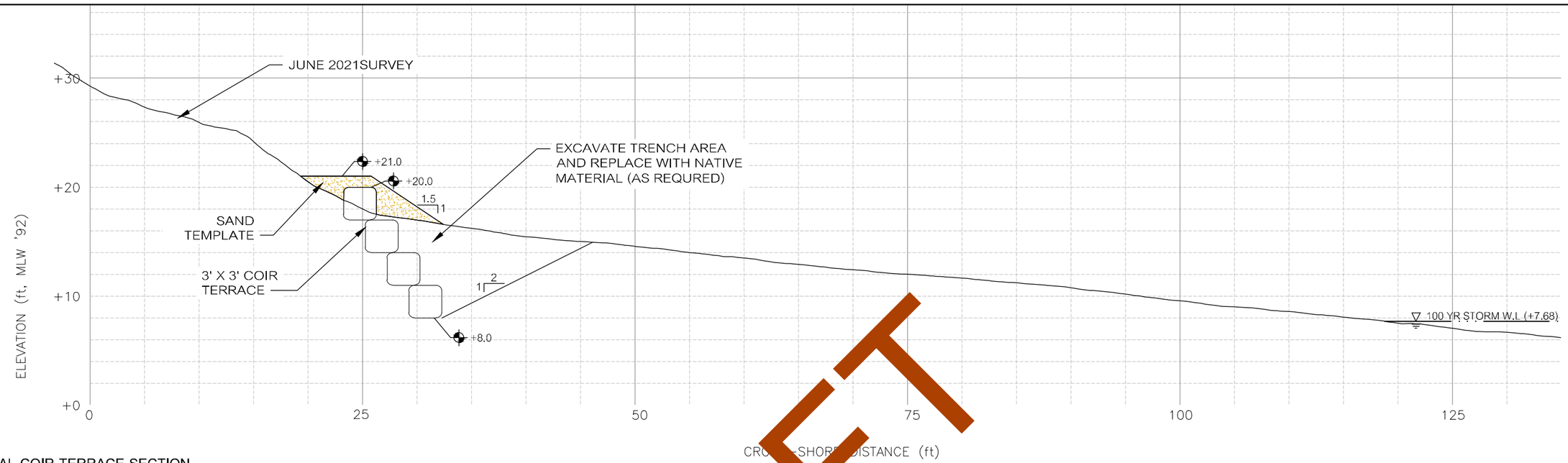
PREPARED BY:
Baird.

SCONSET BEACH PRESERVATION FUND

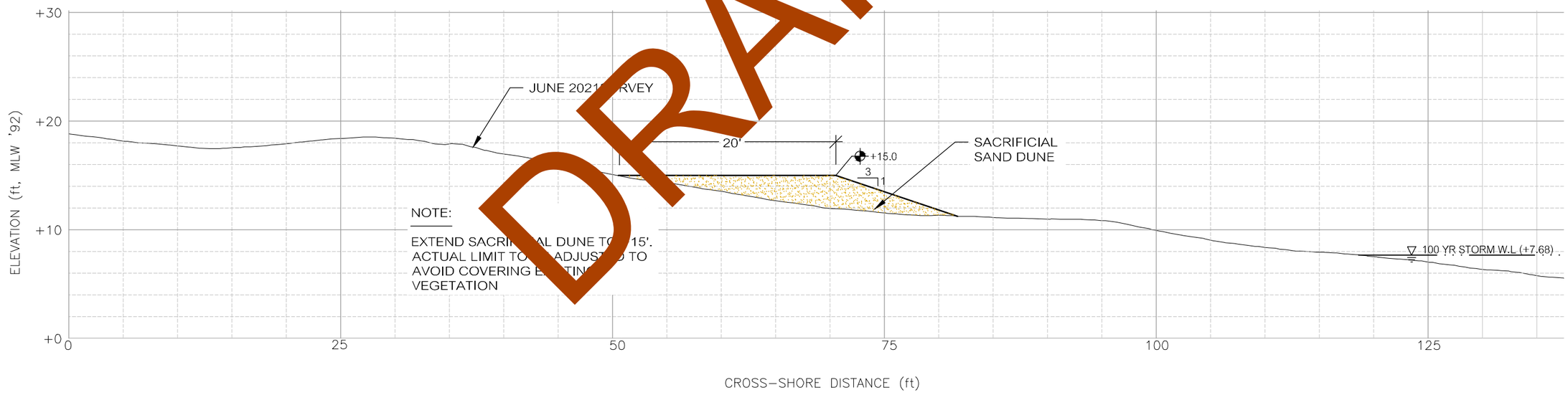
TYPICAL SECTIONS

DRAWING NUMBER: 12643.201 C 040 REV. A

Date Plotted: 10-25-2022 3:57:22 PM



04/020 TYPICAL COIR TERRACE SECTION



05/030 TYPICAL DUNE SECTION

DRAFT

FOR PERMITTING PURPOSES ONLY

GENERAL NOTES

1. ELEVATIONS ARE REFERENCED TO MLW '92.

0 5 10 20
GRAPHIC SCALE FEET

PH	REV	DESCRIPTION	DRN	DSN	APR	QCM	YYYY-MM-DD
C	A	FOR PERMIT	BKC	GCT			2022-10-26

REVISIONS

(PH) PHASE OF ISSUE: (A) PRELIMINARY (B) DESIGN (C) PERMIT (D) TENDER (E) CONSTRUCTION (F) RECORD

PREPARED FOR:

PREPARED BY: Baird.

SCONSET BEACH PRESERVATION FUND

TYPICAL SECTIONS

DRAWING NUMBER: 12643.201 C 050 REV. A

Date Plotted: 10-25-2022 3:57:23 PM

2023 Select Board Meeting Schedule
(Approved XX)

January
1/4
1/5 - xs
1/11
1/18
1/25 (+ County mtg)

February
2/1
2/2 - xs
2/8
2/15
2/22 (+ County mtg)

March
NO meeting 3/1 (school vacation week)
3/8
3/9 – xs
3/15
3/20 – 4pm - joint SB-FinCom-CapCom mtg re: FC & PB motions
3/22 (+ County mtg)
NO meeting 3/29 (5th Wed)

April
4/5
4/6 - xs
4/12
NO meeting 4/19 (school vacation week)
4/26 (+ County mtg)

May
5/2 – 2pm – Pre-ATM conference with Moderator
5/3
5/4 – xs
5/6 – 8:30am – 2023 ATM
5/10
5/17

DRAFT

5/24 – 10am - Swearing-in & election of SB officers after 5/23 election)
5/24 (+ County mtg)
NO meeting 5/31 (5th Wed)

*June – start summer schedule (*added more meetings per Select Board request)*
6/7
6/8 - xs
6/14*
NO meeting 6/21
6/28 (+ County mtg)

July
7/5
7/6 - xs
7/12*
7/19 (+ County mtg)
NO meeting 7/26

August
8/2
8/3 - xs
NO meeting 8/9
8/16 (+ County mtg)
NO meeting 8/23 or 8/30

September
9/6
9/7 - xs
9/13
9/20
9/27 (+ County mtg)

October
10/4
10/5 - xs
10/11
10/18
10/25 (+ County mtg)

DRAFT

November
11/1
11/2 - xs
11/8
11/15
NO meeting 11/22 (day before Thanksgiving)
11/29 (+ County mtg)

December
12/6
12/7 - xs
12/13
12/20 (+ County mtg)
NO meeting 12/27

DRAFT

**** DRAFT as of 11/07/22 ** III**

Transportation and Parking Advisory Committee
Established by Select Board:

Appointed by and reports to: Select Board

Membership:

- 1 Nantucket Town Association representative
- 1 Advisory Committee of Non-Voting Taxpayers (ACNVT) representative
- 1 Chamber of Commerce representative
- 1 resident who resides within a current parking district
- 1 resident who resides outside of any parking district
- 1 representative for the Nantucket Regional Transit Authority as designated by the NRTA Advisory Board
- 1 resident who has Professional Engineer or has equivalent experience

Ex officio: Transportation Program Manager

Commented [LG1]: Hopefully this could continue to be Art Gasbarro

Term: 3 years (expirations on June 30)

Mission:
It is intended that this group will ~~replace~~ incorporate the existing Traffic Safety Work Group ~~and, with the approval of the Nantucket Planning & Economic Development Commission (NP&EDC), the Bicycle and Pedestrian Advisory Committee (BPAC)~~.

Intent is for this group to serve as a referral for all parking issues, including:

- General parking policy/regulation change recommendations/review/requests
- Requests for changes to Parking and Traffic Regulations and policies and take up parking and traffic-related requests, including but not limited to:
  - Yellow line removals/additions
  - Loading zone
  - No Parking changes
  - Timed parking
  - Overnight parking
  - Municipal parking lot management/rules
  - Parking spot elimination/addition requests
    Street direction changes
  - Bicycle and moped parking
  - ~~Bicycle/Side Path/Multi-use Path/Sidewalk issues related to bicycles and micro-mobility devices~~
  - Curbside management regulations/policies
  - Speed limits

DRAFT

- All safety-related requests must be compliant with Town and State laws/regulations and will factor in guidance from applicable guidelines such as the Manual for Uniform Traffic Control Devices
- Develop recommendations for Paid Parking program, using Select Board Strategic Plan, Transportation Focus Area, Downtown Parking Management Goal, for presentation to the Select Board, initially by June 1, 2023
- If paid parking is adopted, recommend revenue expenditures from paid parking program for projects, operational support within the paid parking zone(s); and/or Nantucket Regional Transit Authority (NRTA) service improvements
- Review of trends, industry standards, regulations and/or parking programs in other municipalities
- All recommendations will be submitted to the Town Manager in advance of any Select Board review

Staff Assistance:
- Parking Coordinator
- Transportation Program Manager
- Town Engineer
- Others as needed and so designated through Town Administration, as resources allow

Staff Guidance:
- Transportation Program Manager, Parking Coordinator, Police Chief designee, Fire Chief designee, Public Works designee, other Town staff as needed and approved through Town Manager

Meetings
The Committee is a public body and Open Meeting and Conflict of Interest Laws apply.
The Committee is expected to:
- schedule a regular meeting schedule of at least one meeting per month
- provide an annual report to Town Administration
- provide a Committee liaison to Town Administration
- attend Select Board meetings as requested
- hold public input sessions as needed when considering recommendations in connection with regulation changes/new regulations
- designate a member to take minutes and prepare agendas in accordance with Open Meeting Law requirements

The Committee does not have a budget and has no access to Town funds unless approved in advance by the Town Manager.

DRAFT