



Environmental Consulting & Restoration, LLC



## PEER REVIEW

**TO:** Town of West Tisbury Conservation Commission  
**FROM:** Stan Humphries @ ECR *SMH*  
**DATE:** August 7, 2023  
**LOCUS:** 245, 257 and 271 John Cottle Rd., West Tisbury

### INTRODUCTION

Environmental Consulting & Restoration, LLC (ECR) was requested by the Commission to review and comment on the proposed shore protection project included with the NOI application for the properties located at 245, 257 and 271 Cottle Road in West Tisbury (the Site). ECR reviewed the NOI application and associated site plans provided by the Conservation Agent as well as the MCZM shoreline change and coastal bank maps, Google Earth images and a report by Greg Berman, Coastal Processes Specialist (WHSG & CCCE) dated July 27, 2023. On July 20, 2023, ECR performed a site evaluation of the existing site conditions and the wetland resource areas including Coastal Bank, Coastal Beach, Coastal Dune and Land Subject to Coastal Storm Flowage. Finally, the project was evaluated for compliance with the Massachusetts Department of Environmental Protection Regulations and the Town of West Tisbury Wetlands Protection Bylaw Regulations, revised June 28, 2016. In addition to these Tasks cited in our Proposed Scope of Services, an Alternative Analysis 6 was identified and is recommended for the Applicant's consideration, if the recommendation is supported by the Commission and Staff.

### SITE AND PROJECT EVALUATION

The glacial deposit on the site clearly characterizes a Coastal Bank as defined in the state wetland regulations and as MCZM has mapped the top of this bank for the site (Figure 1). As shown on the figure, a distinction between the critical nature of the erosion can be made on the west side of the cottage versus the east side. This observation is one factor used in recommending downsizing of the project, as discussed below. As confirmed during the ECR site evaluation, a coastal dune exists where the construction begins approximately 700 feet east of the revetment.

The Berman report sufficiently describes other site details, coastal processes in the vicinity of this glacial headland, general compliance of the project with the state and local regulations and the benefit of removing the old "slumped" revetment to gain additional habitat (i.e., coastal beach). Although the placement of the coir fiber logs will displace the beach resulting in a loss, it appears that the area of beach gained by relocating the revetment will exceed the lost area. While we agree that short term rates should not be used due to very high uncertainty, it appears that the long-term rates of -0.6 ft./yr. and -0.5 ft./yr. (from transects WES 2261 and 2262 in Figure 2) would be more appropriate to use in calculating the annual volume of sediment to be used for beach nourishment, thereby doubling the volume that is being proposed. The two other transects used by the engineers are skewed by erroneous historic shoreline positions, as pointed out by Berman.

The discussion by Berman of modifying the length of the gabion baskets and coir fiber logs is helpful, but we believe that tapering the return ends to match the adjacent grades is more important. It would be beneficial for the Applicant to discuss the process of excavating a 5-6 feet deep trench in the beach in order to place the baskets/logs and whether all of the existing boulders are being removed.

# ECR

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## RECOMMENDATION FOR ALTERNATIVE ANALYSIS 6

In part, the state wetlands Regulations for coastal bank (310 CMR 10.30) state:

- (a) a coastal engineering structure or a 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.*

The Applicant has evaluated five (5) alternatives which address (b) of this section, but it is (a) of this section that requires more attention so as to minimize adverse effects. We recommend that a sixth alternative be evaluated as summarized in Figure 3 which would maintain the length and location of the protective measures on the west side, shorten and shift the measures westward on the east side, include tapering of the ends, and consider relocating the construction access within much closer proximity to the project. The current access proposal will have an adverse effect on the coastal dune and beach, initially, and presumed to have negative impacts in the future if it is used for annual nourishment.

## SUMMARY

The approximate 16' buffer from cottage to the top of the bank is likely close enough to be considered imminent danger and the proposed revetment reconstruction with other gabion/coir measures, to a large degree, may be permissible. However, in consideration of the difference in eroded conditions of the bank, the length of the revetment, and the proposed short- and long-term impacts to the coastal dune from construction access, there is another alternative (6) which would minimize adverse effects of this shoreline protection project.

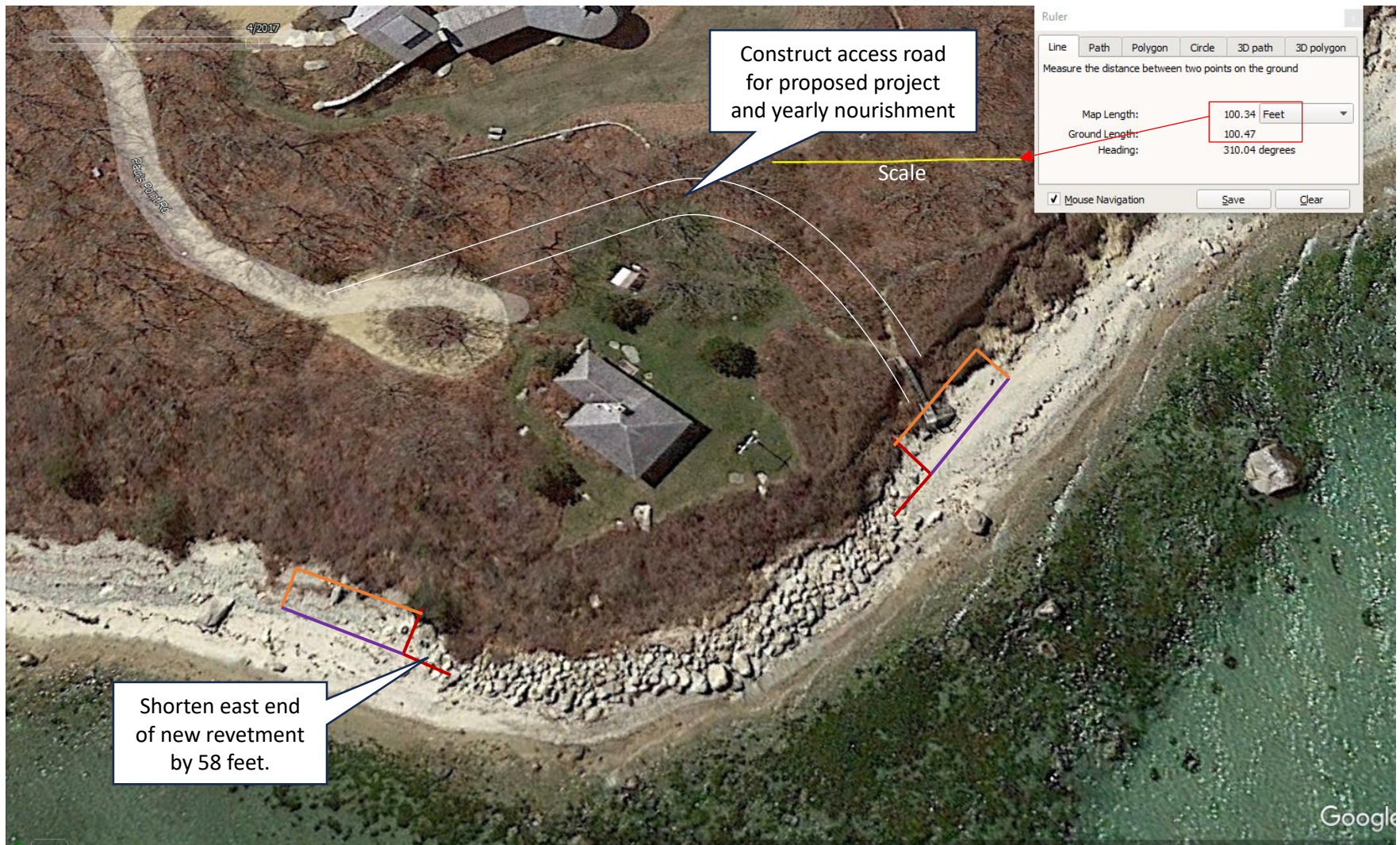
If the Commission has any questions for ECR, please contact me at ([Stan@ecrwetlands.com](mailto:Stan@ecrwetlands.com)) or phone (617) 543 – 1654.



**Figure 1.** The most critical section of coastal bank erosion and retreat (↔) is located north and west of the cottage, landward of the historic position of the top of bank. The less critical section is located east and south of the cottage, seaward of the historic position of the top of bank, as shown by the white arrow.



**Figure 2.** Updated shoreline change mapping by MCZM.



**Figure 3. Recommended Alternative Analysis 6** to minimize project impacts. The different colors correspond to those used on the Sourati Plan for the different measures being proposed.