

Coastal Resiliency Advisory Committee
Tuesday, January 10, 2023
Via Zoom

*Meetings are audio- and video-recorded

Members present: Mary Longacre, Peter Brace, Ian Golding, Jen Karberg, Gary Beller, Joe Topham, Rachael Freeman, Matt Fee

Members Absent: Christy Kickham, Sarah Bois, Joanna Roche

Staff present: Vincent Murphy, Morgan Sayle

Others: Niles Parker (NHA)

YouTube recording: <https://www.youtube.com/watch?v=kIPfIHwaQRc>

1. Call to Order

10:00 a.m.

2. Meeting announcements

Script for remotely conducting Open Meetings, read by the Chair.
The meeting is being audio / visually recorded.

3. Updates and Announcements

- The joint letter to Mass DEP from the Select Board and CRAC was signed and sent on December 6th, 2022.

- Massachusetts Coastal Flood Risk Model (MC-FRM) layers for projected “Probability of Coastal Flooding” for the Present (2020), 2030, 2050, and 2070 are now on the Town GIS system available in Themes under Emergency Preparedness.

<https://www.nantucket-ma.gov/151/GIS-Maps>

- Mr. Murphy reviewed how to access the site and use the layers for probability of coastal flooding that are now available on the Town GIS website. Mr. Beller asked how he could access this information for his house. Mr. Murphy showed flooding at Mr. Beller’s house through 2070 and then stated that depth of flooding is not included here. At Ms. Longacre’s request, Mr. Murphy clarified that MC-FRM illustrates high tide during a storm with wave action. Mr. Brace was curious if there was a layer that would include sunny day flooding or regular high tide? Mr. Murphy responded that the information Mr. Brace was asking for is depicted by NOAA data and that the differentiation of the two types of data could be part of the CRAC committees SLR update to the Town of Nantucket. Ms. Longacre and Mr. Brace commented that further explanation of the GIS data is needed and discussed how to incorporate that level of clarity into the GIS system. Ms. Longacre suggested that the layer be renamed to include “due to storms”. Mr. Murphy discussed that this model is very complex and there is a [Frequently Asked Questions](#)

and that it is his job and that of the Coastal Resilience Coordinator to answer questions. Ms.

Longacre added that the Office of Coastal Zone Management will be holding a training session.

- To access them at <https://nantucketma.mapgeo.io/datasets/properties>, click on Themes on the top right, and expand the selection for Emergency Preparedness.
 - Massachusetts Office of Coastal Zone Management will be conducting training in 2023 on the Massachusetts Coast Flood Risk Model (link goes to an FAQ document.) Please take five minutes and complete the MC-FRM training survey to help inform the content of the training and get updates on when it will be scheduled.
 - Recording of the Cape Cod Climate Change Collaborative Net Zero 2022 Conference is available at <https://capecodclimate.org/nz-22/watch/>
 - Vince was a presenter in Session 4 and spoke about Nantucket CRP efforts
 - Massachusetts Climate Change Assessment <https://www.mass.gov/info-details/massachusetts-climate-change-assessment>.
 - “This assessment will directly inform the first five-year update to the State Hazard Mitigation and Climate Adaptation Plan (SHMCAP) that will be released in Fall 2023.”
 - Nantucket Biodiversity Initiative (NBI) Grant opportunity deadline is March 3, 2023, see <https://www.nantucketbiodiversity.org/research-grants-program> for details. This year the focus is on (1) Biodiversity and (2) Climate Change and Island Resilience research, looking for “projects that explore connections between biodiversity and climate change on Nantucket Island.” Ms. Karberg described that there is a unique opportunity to support research related to climate change at a higher level.
 - Boston Harbor’s Stone Living Lab’s Annual Conference on April 26 to 28, 2022 “Nature-based Coastal Resilience in Urban Settings” is currently open for both registration and abstract submission for possible presentations, see <https://stonelivinglab.org/conference/> for details. Ms. Longacre noted that Boston Harbor’s Stone Living Lab works on the park systems on the Boston Harbor Islands and so their work may be relevant to Nantucket.
 - Municipal Vulnerability Preparedness (MVP) Grant Expression of Interest submission is now open, see Expression of Interest (EOI) for MVP FY24 Action Grant - Formstack
 - Natural Resources Department is currently assessing opportunities.
- Mr. Murphy stated that the MVP grant expression of interest letters are due on January 20th and that communities may be restricted to 2 grants so the NRD Department would like to be the hub for these projects. Ms. Freeman asked whether grants can be collaboratively submitted by multiple municipalities. Mr. Murphy said that multiple municipalities have submitted together previously. Mr. Beller asked what amounts of funding are available. Vince suggested that he hopes that information will be coming out soon but that last year there was approximately 70 million dollars in available grants but it had to be divided between the 78 municipalities that applied. Mr. Beller stated that he feels this grant fits squarely within the CRAC committee’s purview. Ms. Karberg asked what projects Mr. Murphy was considering submitting. He stated that he is considering the Madaket dune system and the downtown flood barrier.

4. Discussion with Niles Parker, Executive Director of the Nantucket Historical Association, reflecting on the lessons learned through the recent WPI student

Resilience project “Story Mapping Sea Level Rise at the Whaling Museum “

Ms. Longacre introduced Mr. Parker from the NHA. Mr. Parker demonstrated a prototype of an interactive ESRI story map for the Whaling Museum. The story map was created by four students from Worcester Polytechnic Institute (WPI) to educate the public on the risks related to climate change that NHA historic properties face and potential adaptations to the predicted flooding. The NHA can use the prototype to build additional interactive story maps for other properties. Mr. Parker emphasized that one of the biggest benefits of the work the WPI students completed was that they compiled and organized different resources from various NHA sources around the island so they can now be easily accessed in a single location. Ms. Longacre asked whether this site would be available for people to interact with at the museum. Mr. Parker stated that yes, it would be available at the museum as a touch screen as well as on the NHA website. However, he added that they are updating and adding to the site before sharing it with the public. Ms. Longacre complimented the storyboard by noting how understandable the information included is. Mr. Brace requested that Mr. Murphy consider implementing this storyboard concept for coastal resiliency projects around the island. Mr. Murphy stated that much of this information is included in the risk assessment that was completed about halfway through the CRP so the information could be taken from this document and maybe this work could be done by a student with an NBI grant or staff from another department. Mr. Beller supported Mr. Brace’s comment and suggested that WPI students could be used to complete this work for the Town. Mr. Murphy agreed that WPI students are a huge benefit and would like to see them working on story maps or other items within the CRP. Mr. Golding also noted his approval for this work. Mr. Brace suggested that Mr. Parker present the Whaling Museum story map prototype at the NHA’s Food For Thought lecture series. Ms. Longacre thanked him for his attendance.

5. Rachael Freeman from the Nantucket Land Bank will present an update on the Land Bank’s Washington Street Resilience project, following up on the plans she presented at the August 23rd CRAC meeting.

Ms. Freeman summarized the Land Bank’s resilience projects. She provided brief updates on the Cisco parking area retreat, Consue Springs restoration and resilience project, and the 16 & 19 East Creek Road improvements. She continued by describing the ongoing Washington Street framework plan in greater detail, the collaborators (Land Bank, Town, ReMain, Scape, and Woods Hole Group), and the modelling processes that have been used to assess the effectiveness of different design strategies in storm events and normal tide predictions. Using flood extents as an example, Ms. Freeman explained how the Woods Hole Group modelled the impact of predicted sea level rise on Washington Street during 10% and 50% storm events as well as 2050 daily high tides. The models show that installation of the framework plan decreases flooding along Washington Street but flood pathways still exist along Commercial Street and the Washington Street Extension (Sayle’s Seafood). Further modeling by the Woods Hole Group was shared by Ms. Freeman that depicted the decreases in flood extents achieved by implementing a deployable flood barrier on Commercial Street. Ms. Freeman finished her presentation on the Washington Street framework plan by returning to the original

rendering of the full park plan and summarizing that results of the mathematical models are what is driving the design that is before the Committee.

Mr. Brace asked whether the Land Bank is considering additional purchases along Washington Street because he felt that the framework plan design appears to work better when it is contiguous. Ms. Freeman responded that the Land Bank is happy to work with private homeowners to achieve mutual goals and that ultimately the Land Bank is focused on areas where they can achieve the greatest impact, i.e. the most intense flood pathways, whether they own those areas or not.

Ms. Karberg stated that she appreciated the presentation and having walked Washington Street, she agrees with the design strategy as presented. She continued by saying that this project is a good example of a combination of nature-based solutions and hard infrastructure and would like to see this expanded to other areas and neighborhoods. Ms. Longacre noted that when she first saw these plans and asked the Land Bank to bring them to the Committee, she began to consider how, in some areas like Commercial Street, small changes such as deployable flood barriers can make a huge difference and that this was something that was overlooked in the Coastal Resiliency Plan as it was focused on a larger scale. Mr. Murphy spoke out on his concerns with relying on deployable flood barriers. He mentioned that the timeliness of installation is important, storage can be a challenge, and the barriers require maintenance. Mr. Murphy also suggested that there could be litigation resulting from restricting public access and not getting up barriers on time. Mr. Fee discussed the need for redundancy with infrastructure such as flood barriers as it is dangerous to rely on any one solution. Mr. Topham stated that he agrees and used Easy Street as an example of a low spot where water frequently accesses infrastructure. He also stated that there needs to be thought given to how to implement these systems. Ms. Longacre brought up the idea that storms are more frequent now and so beginning to implement these strategies is important. Mr. Golding discussed other areas of the country that utilize flood barriers to stop flooding and suggested that Nantucket be taking steps to install barriers sooner rather than later.

6. Coastal Resources Technician Morgan Sayle will demonstrate the new Shoreline Change Monitoring Program webpage, see <https://nantucket-ma.gov/2628/Shoreline-Change-Monitoring-Project>

- Storm erosion impacts from December 23 and 24

Ms. Sayle presented the Coastal Monitoring Project that is now posted on the Town's website. A number of monitoring stations were established along coastal banks over the past year and have been measuring on a monthly basis. Most sites are concentrated on the south shore because this is the most highly eroding. Historic erosion rates are not representative of today's rates. Stakes are placed every 20-feet and measurements to the coastline are taken from the stakes. Most locations have not experienced much change but all 3 locations at the Sewer Beds are rapidly eroding. Ms. Sayle also showed data tables for monitoring stations in Madaket where a lot of variability in erosion at different

stations was noted. Stations at the Airport, Codfish Park, and the end of Hummock Pond Road haven't experienced much change. An effort is made to take measurements before and after storm events.

Mr. Fee asked whether or not it would be possible to add in data from SBPF because they have been taking measurements since 2018. Mr. Murphy stated that many of the measurements were taken on private property, and he is working with homeowners to allow the Town to share the SPBF data.

Mr. Topham noted that SPBF had drones to produce LIDAR data, which may be an efficient way for the Town to collect data. Mr. Murphy said that it may be logistically difficult to access the SPBF data continuously. The Town is acquiring a survey level GPS device to take points for the bank location. Ms. Sayle's added that she is 60% of the way through her drone training program. Mr. Golding noted that he believes the SPBF data should be in the public domain and therefore should be able to be accessed. Mr. Fee seconded that statement that once the information goes to the Conservation Commission, it becomes public data, so the Town should be able to incorporate all of the SPBF data. Ms. Sayle added that she would like to include a station at Sheep Pond Road. Mr. Beller stated that these charts could be used for the Municipal Vulnerability Grant request.

7. Vince Murphy will provide an update on recruiting for the open Coastal Resilience Coordinator position and his new role as Sustainability Programs Manager for Nantucket.

Mr. Murphy applied, was interviewed, and accepted the position for the Sustainability Programs Manager for the Town of Nantucket. He has been operating as both the Coastal Resilience Coordinator and the Sustainability Programs Manager for the past 2 months and will continue to do so until there is a new hire for the Coastal Resilience Coordinator. Mr. Murphy expected to be able to announce a new Coastal Resilience Coordinator at the meeting but he wasn't able to do that yet. In addition, he is looking to the CRAC to potentially help with sustainability issues for the island. Mr. Fee expressed concerns about losing focus and being able to accomplish less if the focus of the CRAC is expanded beyond coastal resilience.

8. Approval of Minutes from October 11th, 25th and November 8th.

October 11th

Edits were suggested. Mr. Beller moved approval and Mr. Brace seconded. Minutes approved with Mr. Topham abstaining.

October 25th

Edits were suggested. Mr. Beller moved approval and Mr. Fee seconded. Minutes were approved.

November 8th

Edits were suggested. Mr. Golding moved approval and Mr. Topham seconded. Minutes were approved with Mr. Beller and Ms. Freeman abstaining.

9. Review of draft 2022 4th Quarter Report to Select Board – See packet

Ms. Longacre requested that this item be moved to a subsequent meeting as there were other agenda items to address, this item was not timely, and there were only 15 minutes remaining in the meeting.

10. 11/8/22 Public Comment questions response – What is the status of the Sand Bank and was all the sand from the Polpis Harbor used?

Mr. Murphy stated that there was a sand bank location identified on Shadbush Road and the sand from the dredging of Polpis Harbor was taken to that location and it was sold to SBPF. Mr. Murphy also stated that he included the need for a location(s) to store sediment in the RFP for the sediment transport study and dredge plan.

11. Public Comment

Mr. Turcotte spoke on behalf of the Nantucket Land Council and requested that an update on the status of the island-wide sediment transport study and dredge plan be included on the next CRAC agenda.

Mr. Rose requested information on the scope of CRAC's purview and specifically whether it could include disaster recovery. Ms. Longacre responded that this issue would be addressed at the next meeting.

12. New business, Committee & Natural Resources Dept. reports from Planning Board, Conservation Commission, Harbor and Shellfish Advisory Board, Select Board, Advisory Committee of Non-Voting Taxpayers, and other committee members.

Ms. Longacre noted that Mr. Murphy was invited to give a virtual presentation to Nantucket Town Association on Tuesday, January 24 at 4pm on Coastal Resilience in the Downtown area. The presentation will be open to the public and the Zoom link is available at <https://www.nantuckettownassociation.org/>.

Provincetown Environmental Planner Tim Famulare reached out to Mr. Murphy and said that he had recently convened a new Coastal Resilience Advisory Committee in Provincetown modeled off Nantucket's CRAC and he hoped to use Nantucket's experience creating a Coastal Resilience Plan as background for Provincetown's efforts.

13. Discussion of upcoming meeting dates and topics: Next meeting date is January 24th.

- At our next meeting, one topic will be a discussion of 2023 CRP priorities.

Mr. Fee requested that CRAC put on the agenda what the next steps for the Town should be with regards to SBPF. Mr. Beller and Mr. Brace concurred and asked that this topic be added to the next agenda.

Ms. Longacre added that the Select Board met in November to review their Strategic Plan and thanked Mr. Bridges and Mr. Fee for supporting the inclusion of the CRP recommendations in the Town's Strategic Plan. Mr. Murphy will be sending out a link to this meeting for CRAC members to watch.

Ms. Longacre continued and suggested that the CRAC consider 2023 resiliency priorities as this had been a topic that was suggested as an agenda item for a future meeting. In addition, Ms. Longacre added that future meeting topics could also include reviewing the CRP area by area and she felt this would be worthwhile doing at an upcoming meeting with the new Coastal Resiliency Coordinator.

Mr. Beller asked whether there is funding for a grant writer being included in the upcoming Town Meeting warrant? Ms. Longacre summarized his comment and noted that a future CRAC agenda item could include a review of the Town budget and coastal resiliency articles for the upcoming Town Meeting.

Ms. Karberg left the meeting at 12pm

14. Motion to adjourn at 12:01 pm