

**John W. Giorgio**  
jgiorgio@k-plaw.com

April 19, 2019

Brandi M. Carrier, MA, RPA  
Archaeologist; Deputy Federal Preservation Officer  
US Department of the Interior, Bureau of Ocean Energy Management  
Office of Renewable Energy Programs, Environment Branch for Renewable Energy  
760 Paseo Camarillo, Suite 102 (CM-102)  
Camarillo, CA 93010

Re: Bureau of Ocean Energy Management (“BOEM”) Finding of Adverse Effect for the  
Vineyard Wind Project Construction and Operations Plan for Lease OCS-A 0501  
 (“COP”) dated April 10, 2019 (“Finding”) – Town of Nantucket, Massachusetts

Dear Ms. Carrier:

KP Law, P.C. serves as Town Counsel to the Town and County of Nantucket, Massachusetts (the “Town”). This letter constitutes the Town’s response to BOEM’s request for mitigation proposals set forth in the Finding.

As you are aware, the Town has acted as a committed and actively engaged consulting party to the National Historic Preservation Act Section 106 review process since its designation as such in June 2018 having, among other actions, participated in the initial consultation meeting by webinar on June 26, 2018, a second consultation meeting in Nantucket on November 17, 2018, and a third consultation meeting in Hyannis on April 2, 2019. As you are also aware, the Town has been significantly involved in the review of the COP as part of the National Environmental Policy Act review process including its submission of oral and written comments to the BOEM Draft Environmental Impact Statement (“DEIS”) associated with the COP on February 11, 2019 and February 22, 2019, respectively.

BOEM since issued its Finding whereby it was determined that the COP presents adverse impacts on the Nantucket Island National Historic Landmark (“NHL”) in accordance with 36 CFR 800.5. As you are aware, BOEM must continue consultation with the State Historic Preservation Officer (“SHPO”) and other consulting parties, including the Town, “to develop and evaluate alternatives or modifications to the undertaking that could avoid, minimize or mitigate adverse effects on historic properties” as required by 36 CFR 800.6(a). To that end, this letter serves to (a) inform BOEM of the Town’s concerns as to the timing associated with this latest phase of the Section 106 review process, (b) offer initial mitigation alternatives for BOEM’s consideration in satisfaction of BOEM’s request, (c) request BOEM to afford consulting parties

additional time to fully develop these alternatives, and (d) request that all such measures be adequately addressed in the Memorandum of Agreement (“MOA”) pursuant to 36 CFR 800.6(c).

Before beginning, the Town wishes to express its concurrence with the Finding’s conclusion that, “[t]he Maritime setting of the (Nantucket NHL) resource and its viewshed would be altered through the introduction of new ocean-founded visual elements proposed in the Vineyard Wind COP that are out of character with the historic setting, feeling, and association of the resource, thereby diminishing its integrity.”<sup>1</sup> The Finding goes on to acknowledge the unique historical attributes of the NHL in great detail.<sup>2</sup> As such, it is imperative that the Town’s mitigation alternatives be adequately addressed in any MOA to enhance, preserve, and protect the NHL. In fact, the Finding conditions BOEM’s approval of the COP on requiring Vineyard Wind to fund mitigation projects for effects to the NHL.<sup>3</sup>

As indicated at the April 2, 2019 consultation meeting in Hyannis, the Town was and continues to be deeply concerned that BOEM required consulting parties to provide appropriate resolution measures prior to the issuance of the Finding. It was at this meeting whereby BOEM declared that proposals for mitigation must be received on or before April 19, 2019, notwithstanding the otherwise applicable 30-day comment period. The Town respectfully disagrees with the Finding’s conclusion that stakeholders agreed to this deadline<sup>4</sup>, and submits that parties were given no other option to provide project proposals.

The Town, as consulting party, only received the Finding by email on April 11, 2019 (and in hard copy by delivery on April 16, 2019), leaving the Town, and presumably other local consulting parties, less than two (2) weeks to review the Finding, consult with key resources such as the SHPO and the Advisory Council for Historic Preservation (“ACHP”), and to prepare comprehensive mitigation proposals. Due to the inadequacy associated with the timing afforded, which does not appear mandated in applicable law, the Town submits that it has not had sufficient time to provide BOEM with adequate consultation as required by 36 CFR 800.6, and is also concerned that the review and consultation process appears bifurcated to require submission of comments at two different occasions relative to the Finding.

Having said this, the Town wishes to continue its full cooperation and to communicate the enclosed preliminary mitigation measures under the directed timeframe of even date hereof, such included in Appendix A hereto. These mitigation measures are proposed on this date as a good faith effort to continue our constructive participation in the Section 106 consultation

---

<sup>1</sup> See Section 4.2 of the Finding at page 24.

<sup>2</sup> See Section 3.2 of the Finding at p. 22-23.

<sup>3</sup> See Section 5.1 of the Finding at page 26.

<sup>4</sup> See Id.

process. The Town respectfully requests in the strongest possible manner that BOEM consider reasonably extending this timeframe to afford the Town sufficient opportunity to fully develop these measures as part of its anticipated comments to the Finding to be submitted by May 10, 2019 in order to ensure that the NHL is adequately protected for decades to come.

To properly and adequately mitigate the COP to the maximum extent possible, local consulting parties should be afforded ample opportunity to understand the full extent of the impact presented in the Finding. After conducting a cursory review of the Finding, the Town has informed us that there remain outstanding questions and issues that must first be addressed in order to adequately inform the Town of its proposed mitigation measures to be taken relative to the NHL. Without adequate consultation and reasonable time to review the Finding and comments thereto from the SHPO and ACHP, there remains a strong likelihood that the Town will not truly understand the adverse effect upon the NHL, and therefore cannot propose a reasonably adequate mitigation package. The Town therefore further reserves the right to supplement or alter this request for mitigation measures until such questions are resolved.

Moreover, the Town maintains that the optimal solution for resolving the COP's adverse impacts on the NHL is through a mitigation fund, as was initially proposed to BOEM on December 20, 2018, and as detailed in Appendix B hereto (the "Mitigation Fund"). The Mitigation Fund model was reached by consensus among all Nantucket-based consulting parties, including the Town, the Nantucket Planning & Economic Development Commission, the Nantucket Conservation Foundation, the Nantucket Historic District Commission, the Nantucket Preservation Trust, and the Maria Mitchell Association.

In a January 28, 2019 email received from you, BOEM acknowledged the Mitigation Fund concept was thoughtful and expressed appreciation that the Nantucket stakeholders were "working together toward an agreement through compromise." Although BOEM had promised to provide further information, guidance, and mediation to develop the Mitigation Fund concept further, it is our understanding that no such feedback or support was provided to the Town. Moreover, the Town was extremely disappointed to learn that BOEM dispensed with this concept altogether during its presentation at the April 2, 2019 consultation meeting. Again, the Town respectfully requests further consideration of the Mitigation Fund as part of this phase of the Section 106 consultation process and its inclusion into the MOA.

Lastly, the Town reiterates its strong support for the removal and relocation of the northern-most rows of turbines comprising the project situated closest to the Town's shore as a viewshed mitigation measure (presented in the DEIS as Alternative C). As stated in the Town's February 22, 2019 comments to the DEIS:

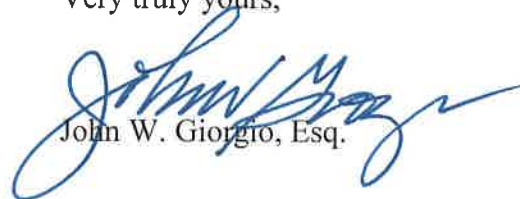
Brandi M. Carrier, MA, RPA  
Bureau of Ocean Energy Management  
Page 4 of 4

“The removal of the six closest wind turbines from Nantucket would “reduce indirect (i.e., visual) impacts on the historic properties on Martha’s Vineyard, the Nantucket Historic District, and Nantucket Sound, from which the proposed Project would be visible (see Section 3.4.3.3).”

As further pointed out in those same comments, this design modification would relocate the most visible turbines away from the Town, and would minimize the adverse visual impacts upon the NHL, without compromising the output potential of the project. Alternative C of the DEIS should therefore be a recommended mitigation measure undertaken in the MOA regarding viewshed, along with the other mitigation measures enclosed herein.

Thank you for your consideration of these comments. The Town looks forward to continuing to partner with BOEM throughout the Section 106 process as a consulting party in order to ensure that the NHL is adequately protected for decades to come. To that end, the Town looks forward to submitting additional comments to the Finding on or before the May 10, 2019 deadline and therefore reserves its right to make further comments thereto and to further develop the mitigation measures herein.

Very truly yours,



John W. Giorgio, Esq.

JWG/bp

Enc.

cc: Select Board and County Commissioners (by email w/enc.)  
Town Manager (by email w/enc.)  
Town Energy Coordinator (by email w/enc.)  
Christopher Daniel, Advisory Council on Historic Preservation (by email w/enc.)  
Jonathan Patton, Massachusetts Historical Commission (by email w/enc.)  
Holly Backus, Nantucket Planning & Economic Development Commission  
(by email w/enc.)  
David Gagnon, Maria Mitchell Association (by email w/enc.)  
Michael May, Nantucket Preservation Trust (by email w/enc.)  
James Russell, Nantucket Historical Association (by email w/enc.)  
Stephen Welch, Nantucket Historic District Commission (by email w/enc.)  
David Worth, Nantucket Conservation Foundation (by email w/enc.)  
Nathaniel Mayo, Vineyard Wind (by email w/enc.)

## Appendix A

Protecting and preserving the Landmark District of Nantucket against coastal flooding, erosion, and shoreline change through adaptation measures:

1. Shoreline Management
  - a. Sediment Transport Studies to help position the Town for improved erosion and sand management in relation to beach nourishment and other projects that may arise.
    - i. Implement a project to map the near shore sand and sediment transport to develop a sand-budget model for monitoring island wide coastal erosion. Side scan sonar will be used to measure bathymetry in extremely shallow water, between 0 and 20 ft. deep. Mapping in high resolution monitors the movement of sand shoals and identifies location of marine habitat on the sea floor
    - ii. Implement a project to map the harbor floors (Madaket, Polpis and Nantucket) to measure and monitor sediment transport. Information will be used to develop dredging and disposal plan, as well as the Harbor Management Plan. Side scan sonar will be used to measure bathymetry in extremely shallow water, between 0 and 20 ft. deep.
  - b. Bank stabilization, beach nourishment, and dune restoration through native plantings on entire south shore
  - c. Artificial reefs and other efforts to protect the shoreline against wave action
  - d. Shore protection structures:
    - i. Seawalls, bulkheads, revetments, wave attenuator
2. General support for strategies and recommendations as identified in the Town of Nantucket's [Hazard Mitigation Plan](#) & [Coastal Resiliency Plan](#) to help the island resist, absorb, recover and adapt from sea level rise, shoreline changes, and increasing magnitude and frequency of storm events related to climate change. Such projects, as outlined in the accompanying attachment "**HMP Prioritized Strategies**", may include:
  - a. Funding for the design, engineering, land acquisition or eminent domain taking and construction of a new road between Madaket Road and Millie's Bridge in the event that the Ames Avenue/Madaket Road intersection were to become compromised, thereby eliminating access to Smith Point.
  - b. Conducting a targeted hazard vulnerability assessment of historic structures and offer technical assistance to property owners.
  - c. Development of a comprehensive storm water management plan that addresses needs and priorities to reduce flooding and improve drainage. Include a funding model and possible revenue sources to sustain ongoing maintenance and capital improvements. The Plan should review policy and regulations that govern the discharge of water into the Town's ROW and those that have direct connection to the Town's storm drainage system. The rising sea level and water table is leading to more sump pumps discharging into the drains or on the roadway. Includes Storm Water By-law.
  - d. Adoption of a set of design guidelines to encourage floodproofing and elevation of structures while maintaining their historic characters.



## Appendix B

This proposal for a Mitigation Fund was reached in consensus among a united group of Nantucket consulting parties on December 12, 2018, as an appropriate creative mitigation solution to resolve collective concerns with Vineyard Wind project, being:

- How do we ensure a long-standing commitment of support from Vineyard Wind for the duration of the visual impact (30+ years) not just for short-term projects with immediate needs?
- How can we ensure a fair process for considering and awarding eligible projects? There is a challenge in identifying the most deserving projects, since parties represent competing interests.
- What is a fair mitigative package for island-wide/community-wide impacts?

This concept was provided to BOEM for further consultation on December 20, 2018.

### **Proposed Concept:**

#### **The Nantucket Offshore Wind Mitigation Fund**

Modeled after the [Nantucket Community Preservation Committee](#) (CPC) Fund and the Massachusetts Historical Commission "[Massachusetts Preservation Projects Fund](#)", in partnership with the [Community Foundation for Nantucket](#)

#### **Fund Goals:**

Local consulting parties propose to establish an Offshore Wind Mitigation Fund to partially offset the adverse effects of offshore wind projects developed in the visual vicinity of the Nantucket. The fund, financially supported through lump and/or perpetual annual payments from one or more offshore wind developers, will provide community grants through the Community Foundation of Nantucket (CFN), deemed fair and appropriate from a community perspective, for projects that enhance, preserve, and protect the Nantucket Historic District National Historic Landmark (NHL). Eligible projects should meet the requirements from one or more of the following areas:

- **Historic Preservation (Preservation)**
- **Historic Restoration (Enhancement)**
- **Historic Education & Tourism (Enhancement)**
- **Coastal Resiliency/Climate Change Mitigation (Protection from Erosion/Flooding)**

#### **Eligible Activities:**

- **Pre-development Projects:** Applications may be submitted to conduct studies necessary to enable future development or protection of a historic properties, such as feasibility studies involving the preparation of plans and specifications and historic structures reports.
- **Development Projects:** Applications may be submitted for construction activities including stabilization, protection, rehabilitation, and restoration. Grant funding can be used to cover costs of material and labor necessary to ensure the preservation, safety, and accessibility of historic cultural resources.

The Mitigation Fund is intended to support a broad spectrum of projects for the benefit of the Nantucket NHL. Projects eligible for grant funding may include such examples as:

- Historical and Archeological Surveys
- Protecting historic structures from rising sea levels
- Updating the Nantucket Historic District Commissions “Building with Nantucket in Mind” to account for climate change impacts
- Erosion control projects on Nantucket’s southern coast, including beach nourishment and dune restoration
- 3-D imaging of historic downtown
- Survey and historic restoration of Main Street cobblestones and sidewalks
- Programming support for local history museums and attractions: Whaling Museum, Shipwreck Museum, Loines Observatory, Nantucket Atheneum, etc.
- Sankaty Light - Conservation, Restoration, Interpretive Interaction Resources for historic 1850 lighthouse
- Old Mill renovation and digital guide app
- Tom Nevers Naval Base/ JFK Bunker: rehab and preservation of facility into historical museum

### **Governance**

Consulting parties propose to establish a donor-advised “Field of Interest Partner Fund” with the [Community Foundation for Nantucket \(CFN\)](#), which will serve as the direct recipient and operator of the Mitigation Fund assets. This type of fund provides the greatest grantmaking flexibility to the Foundation, by expanding applicant eligibility beyond just 501 c 3 charitable organizations.

A grantmaking advisory panel, under the auspices of CFN, with expertise or interest in the areas noted above, will be responsible for reviewing applicant proposals and recommending funding for eligible projects. Offshore wind developers contributing to the Mitigation Fund may hold a seat on the grantmaking advisory panel. A minimum cost-share percentage of project costs by grant applicants is recommended, with grant applications accepted on a rolling basis and awarded bi-annually.

### **Who Can Apply**

Municipal, charitable, community and voluntary groups based or operating primarily on Nantucket are eligible to apply. This includes faith-based organizations where a project is clearly community focused and inclusive. A mechanism for providing grants directly to private residents and businesses for eligible projects may be explored and considered.

# Town of Nantucket Prioritized Hazard Mitigation Strategies

## Strategy #SC1

<b>Complete the Community/Coastal Resilience Plan and Become an MVP Community</b>	
<b>Total STAPLEE Score</b>	Sea Level Rise, Shoreline Change, and Erosion
<b>Primary Hazard</b>	9
<b>Status</b>	New
<b>Responsible Department</b>	Planning & Land Use Services
<b>Timeframe</b>	7/2018-6/2019
<b>Estimated Cost</b>	\$10,000 - \$50,000
<b>Potential Funding Sources</b>	Grants

## Strategy #F10

<b>Participate in a limited public-private partnership with Nantucket Engineering &amp; Survey to complete a study of the Fulling Mill Brook watershed, in particular the hydrologic conditions at Polpis Road, to identify alternatives for improvements to this area.</b>	
<b>Total STAPLEE Score</b>	Flooding
<b>Primary Hazard</b>	8
<b>Status</b>	New
<b>Responsible Department</b>	Public Works
<b>Timeframe</b>	7/2018-6/2020
<b>Estimated Cost</b>	\$50,000 - \$100,000
<b>Potential Funding Sources</b>	Operating Budget / Capital Improvement Budget

## Strategy #WF2

<b>Complete mutual aid agreement with the NCF, Nantucket Land Council, Nantucket Land Bank, and/or Massachusetts Audubon Society for firefighting assistance.</b>	
<b>Total STAPLEE Score</b>	Wildfire
<b>Primary Hazard</b>	8
<b>Status</b>	Carried Forward
<b>Responsible Department</b>	Fire Department
<b>Timeframe</b>	7/2018-6/2019
<b>Estimated Cost</b>	Less than \$10,000
<b>Potential Funding Sources</b>	Operating Budget



# Town of Nantucket Prioritized Hazard Mitigation Strategies

## Strategy #A5

<b>Review the Nantucket Intermediate School and the Elementary School and determining their abilities to serve as emergency shelters.</b>	
<b>Total STAPLEE Score</b>	All
<b>Primary Hazard</b>	7
<b>Status</b>	New
<b>Responsible Department</b>	Emergency Management
<b>Timeframe</b>	7/2019-6/2021
<b>Estimated Cost</b>	\$10,000 - \$50,000
<b>Potential Funding Sources</b>	Operating Budget

## Strategy #A10

<b>Conduct a targeted hazard vulnerability assessment of historic structures, and offer technical assistance to property owners.</b>	
<b>Total STAPLEE Score</b>	All
<b>Primary Hazard</b>	7
<b>Status</b>	New
<b>Responsible Department</b>	Planning & Land Use Services
<b>Timeframe</b>	7/2019-6/2021
<b>Estimated Cost</b>	\$50,000 - \$100,000
<b>Potential Funding Sources</b>	Operating Budget / Massachusetts Historical Commission

## Strategy #F6

<b>Develop a comprehensive storm water management plan that addresses needs and priorities to reduce flooding and improve drainage. Include a funding model and possible revenue sources to sustain ongoing maintenance and capital improvements. The Plan should review policy and regulations that govern the discharge of water into the Town's ROW and those that have direct connection to the Town's storm drainage system. The rising sea level and water table is leading to more sump pumps discharging into the drains or on the roadway.</b>	
<b>Total STAPLEE Score</b>	Flooding
<b>Primary Hazard</b>	7
<b>Status</b>	New
<b>Responsible Department</b>	Public Works
<b>Timeframe</b>	7/2020-6/2023
<b>Estimated Cost</b>	\$50,000 - \$100,000
<b>Potential Funding Sources</b>	Grants

# Town of Nantucket Prioritized Hazard Mitigation Strategies

## Strategy #F19

Relocate important hard-copies of Town records (including Finance Department records and Health Department records) to a new storage location outside of the SFHA (currently located on Washington Street)	
Total STAPLEE Score	Flooding
Primary Hazard	7
Status	New
Responsible Department	Administration
Timeframe	7/2018-6/2020
Estimated Cost	Less than \$10,000
Potential Funding Sources	Operating Budget

## Strategy #F25

Develop a protocol or formal Standard Operating Procedure for opening and closing of the tide gate at Children's Beach boat ramp. Work with local citizens to make sure they are aware of the protocol.	
Total STAPLEE Score	Flooding
Primary Hazard	7
Status	New
Responsible Department	Public Works
Timeframe	7/2019-6/2021
Estimated Cost	Less than \$10,000
Potential Funding Sources	Operating Budget

## Strategy #WS1

Develop local capacity for housing emergency equipment and personnel in Madaket village during a storm, in case of isolation due to road closure.	
Total STAPLEE Score	Winter Storms
Primary Hazard	7
Status	New
Responsible Department	Emergency Management
Timeframe	7/2020-6/2023
Estimated Cost	\$50,000 - \$100,000
Potential Funding Sources	Emergency Operations Center Grants / Grants

## Strategy #WS2

Develop local capacity for housing emergency equipment and personnel in 'Sconset village during a storm, in case of isolation due to road closure.	
Total STAPLEE Score	Winter Storms
Primary Hazard	7
Status	New
Responsible Department	Emergency Management
Timeframe	7/2020-6/2023
Estimated Cost	\$50,000 - \$100,000
Potential Funding Sources	Emergency Operations Center Grants / Grants

# Town of Nantucket Prioritized Hazard Mitigation Strategies

## Strategy #A1

<b>Obtain necessary radios and chargers for DPW staff and equipment to operate efficiently during town-wide emergencies</b>	
<b>Total STAPLEE Score</b>	All
<b>Primary Hazard</b>	6
<b>Status</b>	New
<b>Responsible Department</b>	Public Works
<b>Timeframe</b>	7/2018-6/2020
<b>Estimated Cost</b>	Less than \$10,000
<b>Potential Funding Sources</b>	Capital Improvement Budget

## Strategy #A6

<b>Develop a comprehensive checklist that cross-references bylaws, regulations, and codes related to natural hazard damage prevention that may be applicable to proposed development project.</b>	
<b>Total STAPLEE Score</b>	All
<b>Primary Hazard</b>	6
<b>Status</b>	Carried Forward
<b>Responsible Department</b>	Planning & Land Use Services
<b>Timeframe</b>	7/2018-6/2020
<b>Estimated Cost</b>	Less than \$10,000
<b>Potential Funding Sources</b>	Operating Budget

## Strategy #F2

<b>Conduct Master Drainage Study for the Downtown area and its watershed. Identify needs for storm water drainage improvement, including backflow devices at outfalls at the harbor. Develop an operations &amp; maintenance policy for retention/detention and water quality treatment (Stormceptors) systems for Town and privately owned facilities</b>	
<b>Total STAPLEE Score</b>	Flooding
<b>Primary Hazard</b>	6
<b>Status</b>	Carried Forward
<b>Responsible Department</b>	Public Works
<b>Timeframe</b>	7/2018-6/2021
<b>Estimated Cost</b>	\$10,000 - \$50,000
<b>Potential Funding Sources</b>	Grants

# Town of Nantucket Prioritized Hazard Mitigation Strategies

## Strategy #F4

<b>Conduct master drainage studies for problematic inland areas, such as that between Madaket Road and Hummock Pond Road, to ensure that individual repairs and upgrades fit seamlessly with upstream and downstream drainage systems.</b>	
<b>Total STAPLEE Score</b>	Flooding
<b>Primary Hazard</b>	6
<b>Status</b>	New
<b>Responsible Department</b>	Public Works
<b>Timeframe</b>	7/2020-6/2023
<b>Estimated Cost</b>	\$50,000 - \$100,000
<b>Potential Funding Sources</b>	Grants

## Strategy #F5

<b>Complete Consue Springs project (including Orange St. and Pleasant St. systems) to improve drainage and outfall discharge in that area. The outfall serves a drainage area of 36 acres with several retention/detention systems. The project scope has been revised to address the restoration of the pond and creek to improve water quality.</b>	
<b>Total STAPLEE Score</b>	Flooding
<b>Primary Hazard</b>	6
<b>Status</b>	New
<b>Responsible Department</b>	Public Works
<b>Timeframe</b>	7/2018-6/2020
<b>Estimated Cost</b>	\$10,000 - \$50,000
<b>Potential Funding Sources</b>	Grants

## Strategy #F8

<b>Adopt a set of design guidelines to encourage flood proofing and elevation of structures while maintaining their historic characters. The NFIP Floodplain Management Bulletin FEMA P-467-2, "Historic Structures," may be referenced.</b>	
<b>Total STAPLEE Score</b>	Flooding
<b>Primary Hazard</b>	6
<b>Status</b>	New
<b>Responsible Department</b>	Planning & Land Use Services
<b>Timeframe</b>	7/2018-6/2020
<b>Estimated Cost</b>	Less than \$10,000
<b>Potential Funding Sources</b>	Operating Budget / Massachusetts Historical Commission

# Town of Nantucket Prioritized Hazard Mitigation Strategies

## Strategy #F9

<b>Complete repairs to Children's Beach storm water pump and outfall to improve reliability, and reduce/eliminate backflow into the pump and drainage system during high tides. This system support a drainage area of more than 150 Acres.</b>	
<b>Total STAPLEE Score</b>	Flooding
<b>Primary Hazard</b>	6
<b>Status</b>	New
<b>Responsible Department</b>	Public Works
<b>Timeframe</b>	7/2018-6/2020
<b>Estimated Cost</b>	\$50,000 - \$100,000
<b>Potential Funding Sources</b>	Capital Improvement Budget

## Strategy #F11

<b>Educate residents, developers, and regulators about the zoning regulation allowing height limitations in "one-hundred-year" flood zones to be defined based on the first floor elevation as required by floodplain management regulations [updated 7/12/2016]. Target repetitive loss property owners for this education.</b>	
<b>Total STAPLEE Score</b>	Flooding
<b>Primary Hazard</b>	6
<b>Status</b>	New
<b>Responsible Department</b>	Planning & Land Use Services
<b>Timeframe</b>	7/2018-6/2020
<b>Estimated Cost</b>	\$10,000 - \$50,000
<b>Potential Funding Sources</b>	Operating Budget

## Strategy #F13

<b>Adopt local freeboard standards that include AE zones when regulating development in flood zones.</b>	
<b>Total STAPLEE Score</b>	Flooding
<b>Primary Hazard</b>	6
<b>Status</b>	Carried Forward
<b>Responsible Department</b>	Planning & Land Use Services
<b>Timeframe</b>	7/2019-6/2022
<b>Estimated Cost</b>	Less than \$10,000
<b>Potential Funding Sources</b>	Operating Budget

# Town of Nantucket Prioritized Hazard Mitigation Strategies

## Strategy #F21

Investigate and implement actions that mitigate the repetitive damage to the Harbormaster's facility on the Town Pier.	
Total STAPLEE Score	Flooding
Primary Hazard	6
Status	New
Responsible Department	Administration
Timeframe	7/2019-6/2021
Estimated Cost	\$50,000 - \$100,000
Potential Funding Sources	Operating Budget

## Strategy #SC2

Update the Nantucket and Madaket Harbors Action Plan (HAP) to incorporate needs for Hazard Mitigation and Coastal Resilience	
Total STAPLEE Score	Sea Level Rise, Shoreline Change, and Erosion
Primary Hazard	6
Status	New
Responsible Department	Planning & Land Use Services
Timeframe	7/2019-6/2021
Estimated Cost	\$10,000 - \$50,000
Potential Funding Sources	Operating Budget

## Strategy #SS1

Ensure the Nantucket Building Department is fully educated on the 2017 building codes.	
Total STAPLEE Score	Summer Storms & Tornadoes
Primary Hazard	6
Status	New
Responsible Department	Building Department
Timeframe	7/2018-6/2019
Estimated Cost	Less than \$10,000
Potential Funding Sources	Operating Budget

## Strategy #WF1

Complete the Community Wildfire Protection Plan	
Total STAPLEE Score	Wildfire
Primary Hazard	6
Status	New
Responsible Department	Fire Department
Timeframe	7/2019-6/2021
Estimated Cost	\$10,000 - \$50,000
Potential Funding Sources	Grants



# Town of Nantucket Prioritized Hazard Mitigation Strategies

## Strategy #A8

Identify potential alternative access routes to Madaket via Eel Point Rd & Warren's Landing; and develop a maintenance plan to ensure Eel Point Road/Warren Road emergency access route is capable of passing emergency vehicles during an event.

<b>Total STAPLEE Score</b>	All
<b>Primary Hazard</b>	5
<b>Status</b>	Carried Forward
<b>Responsible Department</b>	Public Works
<b>Timeframe</b>	7/2021-6/2023
<b>Estimated Cost</b>	\$10,000 - \$50,000
<b>Potential Funding Sources</b>	Operating Budget / Grants

## Strategy #A13

Explore development of one or more microgrid systems for core mid-island critical facilities to determine potential costs and benefits.

<b>Total STAPLEE Score</b>	All
<b>Primary Hazard</b>	5
<b>Status</b>	New
<b>Responsible Department</b>	Energy Coordinator
<b>Timeframe</b>	7/2020-6/2022
<b>Estimated Cost</b>	\$10,000 - \$50,000
<b>Potential Funding Sources</b>	Grants

## Strategy #F3

In the Downtown area (including Brant Point to Orange St.), complete CCTV inspection and Storm Water Management Program. Prioritize improvements to reduce flooding.

<b>Total STAPLEE Score</b>	Flooding
<b>Primary Hazard</b>	5
<b>Status</b>	New
<b>Responsible Department</b>	Public Works
<b>Timeframe</b>	7/2018-6/2019
<b>Estimated Cost</b>	\$10,000 - \$50,000
<b>Potential Funding Sources</b>	Grants

# Town of Nantucket Prioritized Hazard Mitigation Strategies

## Strategy #F14

<b>Increase the elevation of Madaket Road at Head of Long Pond and harden the embankment for wave action. Final elevation to be examined and analyzed considering sea-level rise. Coordinate with culvert improvements or replacement.</b>	
<b>Total STAPLEE Score</b>	Flooding
<b>Primary Hazard</b>	5
<b>Status</b>	Carried Forward
<b>Responsible Department</b>	Public Works
<b>Timeframe</b>	7/2020-6/2023
<b>Estimated Cost</b>	More than \$100,000
<b>Potential Funding Sources</b>	Capital Improvement Budget

## Strategy #F15

<b>Increase the elevation of Madaket Road at Madaket Ditch and harden the embankment for wave action. Final elevation to be examined and analyzed considering sea-level rise. Coordinate with culvert improvements or replacement.</b>	
<b>Total STAPLEE Score</b>	Flooding
<b>Primary Hazard</b>	5
<b>Status</b>	New
<b>Responsible Department</b>	Public Works
<b>Timeframe</b>	7/2020-6/2023
<b>Estimated Cost</b>	More than \$100,000
<b>Potential Funding Sources</b>	Capital Improvement Budget

## Strategy #F16

<b>Increase the elevation of Polpis Road at Fulling Mill Brook and harden the embankment for wave action. Final elevation to be examined and analyzed considering sea-level rise.</b>	
<b>Total STAPLEE Score</b>	Flooding
<b>Primary Hazard</b>	5
<b>Status</b>	New
<b>Responsible Department</b>	Public Works
<b>Timeframe</b>	7/2020-6/2023
<b>Estimated Cost</b>	More than \$100,000
<b>Potential Funding Sources</b>	Capital Improvement Budget

# Town of Nantucket Prioritized Hazard Mitigation Strategies

## Strategy #F17

<b>Increase the elevation of Polpis Road at Sesachacha Pond and harden the embankment for wave action. Final elevation to be examined and analyzed considering sea-level rise.</b>	
<b>Total STAPLEE Score</b>	Flooding
<b>Primary Hazard</b>	5
<b>Status</b>	New
<b>Responsible Department</b>	Public Works
<b>Timeframe</b>	7/2020-6/2023
<b>Estimated Cost</b>	More than \$100,000
<b>Potential Funding Sources</b>	Capital Improvement Budget

## Strategy #F18

<b>Increase the elevation of Wauwinet Road at Polpis Harbor and harden the embankment for wave action. Final elevation to be examined and analyzed considering sea-level rise.</b>	
<b>Total STAPLEE Score</b>	Flooding
<b>Primary Hazard</b>	5
<b>Status</b>	New
<b>Responsible Department</b>	Public Works
<b>Timeframe</b>	7/2020-6/2023
<b>Estimated Cost</b>	More than \$100,000
<b>Potential Funding Sources</b>	Capital Improvement Budget

## Strategy #F20

<b>Investigate and implement engineered flood protection solutions for the Finance Department Building (short-term) and develop options to relocate the office to a flood proof location (long-term).</b>	
<b>Total STAPLEE Score</b>	Flooding
<b>Primary Hazard</b>	5
<b>Status</b>	New
<b>Responsible Department</b>	Administration
<b>Timeframe</b>	7/2021-6/2023
<b>Estimated Cost</b>	\$50,000 - \$100,000
<b>Potential Funding Sources</b>	Operating Budget / Capital Improvement Budget

## Strategy #F26

<b>Contact the owners of Repetitive Loss Properties and nearby properties at risk to inquire about mitigation undertaken and suggest options for mitigating flooding in those areas. This should be accomplished with a letter directly mailed to each property owner.</b>	
<b>Total STAPLEE Score</b>	Flooding
<b>Primary Hazard</b>	5
<b>Status</b>	New
<b>Responsible Department</b>	Planning & Land Use Services
<b>Timeframe</b>	7/2019-6/2020
<b>Estimated Cost</b>	Less than \$10,000
<b>Potential Funding Sources</b>	Operating Budget

# Town of Nantucket Prioritized Hazard Mitigation Strategies

## Strategy #TS1

Incorporate “code plus” wind-load requirements (more restrictive coding to make a building more resilient, specifically to wind hazards) into new critical and essential facility permitting, specifically,

- The new fuel tank farm
- The new Fire Department facility
- The new hospital building
- Any new or renovated pumping stations

<b>Total STAPLEE Score</b>	Hurricanes and Tropical Storms
<b>Primary Hazard</b>	5
<b>Status</b>	New
<b>Responsible Department</b>	Emergency Management
<b>Timeframe</b>	7/2018-6/2020
<b>Estimated Cost</b>	Less than \$10,000
<b>Potential Funding Sources</b>	Operating Budget

## Strategy #TS3

Document the plan that identifies the haul-out capacity and timely removal of boats from the water in an emergency situation. The Town currently works with local businesses to coordinate the hauling of boats in the event of an imminent storm. This plan should be formalized in writing and the responsibilities of the Town and private providers should be defined.

<b>Total STAPLEE Score</b>	Hurricanes and Tropical Storms
<b>Primary Hazard</b>	5
<b>Status</b>	New
<b>Responsible Department</b>	Planning & Land Use Services
<b>Timeframe</b>	7/2019-6/2020
<b>Estimated Cost</b>	Less than \$10,000
<b>Potential Funding Sources</b>	Operating Budget / Grants

## Strategy #SS2

Provide information on the benefits and applicability of lightning-rods to land-use and building permit applicants; in addition, make this information available on the Town website.

<b>Total STAPLEE Score</b>	Summer Storms & Tornadoes
<b>Primary Hazard</b>	5
<b>Status</b>	New
<b>Responsible Department</b>	Building Department
<b>Timeframe</b>	7/2019-6/2021
<b>Estimated Cost</b>	Less than \$10,000
<b>Potential Funding Sources</b>	Operating Budget

# Town of Nantucket Prioritized Hazard Mitigation Strategies

## Strategy #EQ1

Ensure that employees of the Fire Department, Police Department, and 16 Broad Street building know how to evacuate in case of an earthquake.	
Total STAPLEE Score	Earthquake
Primary Hazard	5
Status	Carried Forward
Responsible Department	Emergency Management
Timeframe	7/2018-6/2019
Estimated Cost	Less than \$10,000
Potential Funding Sources	Operating Budget

## Strategy #EQ2

Perform study of critical facility structures to determine vulnerability to earthquakes	
Total STAPLEE Score	Earthquake
Primary Hazard	5
Status	New
Responsible Department	Emergency Management
Timeframe	7/2021-6/2023
Estimated Cost	\$10,000 - \$50,000
Potential Funding Sources	Grants

## Strategy #A3

Review NMP, and associated Area Plans, for consistency with this HMP, and revise as needed	
Total STAPLEE Score	All
Primary Hazard	4
Status	New
Responsible Department	Planning & Land Use Services
Timeframe	7/2018-6/2020
Estimated Cost	\$10,000 - \$50,000
Potential Funding Sources	Operating Budget

## Strategy #A4

Add a 5-year review of natural hazard mitigation priorities, to coincide with updates of the HMP, to the NMP implementation schedule	
Total STAPLEE Score	All
Primary Hazard	4
Status	New
Responsible Department	Planning & Land Use Services
Timeframe	7/2022-6/2023
Estimated Cost	Less than \$10,000
Potential Funding Sources	Operating Budget

# Town of Nantucket Prioritized Hazard Mitigation Strategies

## Strategy #A7

Identify potential locations and costs, in collaboration with the Steamship Authority, for development of an alternative shipping terminal and navigation channel capable of accepting high-capacity ferries and/or freight boats to maintain critical access to the mainland in case of blockage of the main channel. Outline steps to follow to develop such a terminal.

<b>Total STAPLEE Score</b>	All
<b>Primary Hazard</b>	4
<b>Status</b>	New
<b>Responsible Department</b>	Planning & Land Use Services/Steamship Authority
<b>Timeframe</b>	7/2021-6/2023
<b>Estimated Cost</b>	\$10,000 - \$50,000
<b>Potential Funding Sources</b>	Grants

## Strategy #A11

Conduct a table-top exercise for a simulated tanker leak adjacent to a Town well head to improve emergency response capabilities and identify additional needs. Specifically consider how a natural hazard event may impact response capabilities.

<b>Total STAPLEE Score</b>	All
<b>Primary Hazard</b>	4
<b>Status</b>	New
<b>Responsible Department</b>	Police Department/Emergency Management
<b>Timeframe</b>	7/2018-6/2019
<b>Estimated Cost</b>	Less than \$10,000
<b>Potential Funding Sources</b>	Operating Budget

## Strategy #A12

Complete a study and develop recommendations to improve safety and control runoff on the roadways adjacent to Town water-supply wellheads.

<b>Total STAPLEE Score</b>	All
<b>Primary Hazard</b>	4
<b>Status</b>	New
<b>Responsible Department</b>	Public Works
<b>Timeframe</b>	7/2019-6/2021
<b>Estimated Cost</b>	\$10,000 - \$50,000
<b>Potential Funding Sources</b>	Grants



# Town of Nantucket Prioritized Hazard Mitigation Strategies

## Strategy #A14

**Develop a Nantucket Electric Supply Resilience Plan with National Grid that enhances information sharing, coordinates major projects and improvements, protects against major events, and integrates resilience into planning, investments and decision making.**

<b>Total STAPLEE Score</b>	All
<b>Primary Hazard</b>	4
<b>Status</b>	New
<b>Responsible Department</b>	Energy Coordinator
<b>Timeframe</b>	7/2021-6/2023
<b>Estimated Cost</b>	\$10,000 - \$50,000
<b>Potential Funding Sources</b>	Grants

## Strategy #A15

**Develop and adopt a minimum standard of road improvements and maintenance that supports emergency use and public safety**

<b>Total STAPLEE Score</b>	All
<b>Primary Hazard</b>	4
<b>Status</b>	Carried Forward
<b>Responsible Department</b>	Public Works
<b>Timeframe</b>	7/2019-6/2021
<b>Estimated Cost</b>	\$10,000 - \$50,000
<b>Potential Funding Sources</b>	Operating Budget

## Strategy #A16

**Improve the capabilities of personnel to search and obtain electronic project plans and records for major and critical infrastructure and systems. This includes completing the on-line GIS, deploying accurate location referencing, integrating files across departments, and implementing electronic document management along with scanning all project records. (Lesson learned from the emergency in 2018 and needs for information to locate and perform sewer force main repairs)**

<b>Total STAPLEE Score</b>	All
<b>Primary Hazard</b>	4
<b>Status</b>	New
<b>Responsible Department</b>	Administration / Information Technology & GIS
<b>Timeframe</b>	7/2018-6/2019
<b>Estimated Cost</b>	Less than \$10,000
<b>Potential Funding Sources</b>	Operating Budget

# Town of Nantucket Prioritized Hazard Mitigation Strategies

## Strategy #A17

Identify the needs for emergency materials (gravel, large blocks, pipe, etc.) that are essential to repair and reopen roadways damaged by flooding. Through cooperative agreement with on-Island suppliers, and/or having inventory stocked at DPW, maintain this supply for emergency use.

<b>Total STAPLEE Score</b>	All
<b>Primary Hazard</b>	4
<b>Status</b>	New
<b>Responsible Department</b>	Public Works
<b>Timeframe</b>	7/2018-6/2019
<b>Estimated Cost</b>	\$10,000 - \$50,000
<b>Potential Funding Sources</b>	Operating Budget

## Strategy #A19

The fuel tank farm is being relocated out of the coastal-flood-risk zone to a less at-risk area; however this relocation comes with the risk of fuel spillage during transport from the waterfront and contamination of the municipal water supply. This action is to design and construct roadway improvements that reduce the risk of contamination of the Town's water supply due to new fuel transport.

<b>Total STAPLEE Score</b>	All
<b>Primary Hazard</b>	4
<b>Status</b>	New
<b>Responsible Department</b>	Public Works
<b>Timeframe</b>	7/2021-6/2023
<b>Estimated Cost</b>	Less than \$10,000
<b>Potential Funding Sources</b>	Operating Budget

## Strategy #F1

### Complete development of an Open Space Plan

<b>Total STAPLEE Score</b>	Flooding
<b>Primary Hazard</b>	4
<b>Status</b>	New
<b>Responsible Department</b>	Planning & Land Use Services
<b>Timeframe</b>	7/2018-6/2019
<b>Estimated Cost</b>	\$10,000 - \$50,000
<b>Potential Funding Sources</b>	Operating Budget / Grants

# Town of Nantucket Prioritized Hazard Mitigation Strategies

## Strategy #F7

<b>Document that the Milestone Road crossing of Phillips Run can convey the appropriate flood event. Identify the flood event that will overtop the road.</b>	
<b>Total STAPLEE Score</b>	Flooding
<b>Primary Hazard</b>	4
<b>Status</b>	Carried Forward
<b>Responsible Department</b>	Public Works
<b>Timeframe</b>	7/2021-6/2023
<b>Estimated Cost</b>	Less than \$10,000
<b>Potential Funding Sources</b>	Operating Budget

## Strategy #F22

<b>Initiate development of plans for a long-term Harbormaster facility, incorporating sea level rise.</b>	
<b>Total STAPLEE Score</b>	Flooding
<b>Primary Hazard</b>	4
<b>Status</b>	New
<b>Responsible Department</b>	Administration
<b>Timeframe</b>	7/2020-6/2022
<b>Estimated Cost</b>	More than \$100,000
<b>Potential Funding Sources</b>	Capital Improvement Budget

## Strategy #F23

<b>Perform a network-level inventory and condition assessment of storm water infrastructure to drive development of a dedicated cleaning and maintenance program for the drainage systems. Current approach lacks the equipment and staffing in DPW. Use the same information to identify and plan for capital and improvement projects. Integrate the information with the Town's GIS and Work Order systems.</b>	
<b>Total STAPLEE Score</b>	Flooding
<b>Primary Hazard</b>	4
<b>Status</b>	New
<b>Responsible Department</b>	Public Works
<b>Timeframe</b>	7/2022-6/2023
<b>Estimated Cost</b>	\$50,000 - \$100,000
<b>Potential Funding Sources</b>	Grants

## Strategy #F24

<b>Install water tight sewer manholes in areas that experience regular street flooding.</b>	
<b>Total STAPLEE Score</b>	Flooding
<b>Primary Hazard</b>	4
<b>Status</b>	New
<b>Responsible Department</b>	Public Works
<b>Timeframe</b>	7/2020-6/2021
<b>Estimated Cost</b>	\$50,000 - \$100,000
<b>Potential Funding Sources</b>	Capital Improvement Budget

# Town of Nantucket Prioritized Hazard Mitigation Strategies

## Strategy #TS2

<b>Perform an inventory and condition assessment of Town owned trees by a certified arborist that identifies a maintenance, pruning and removal schedules. Develop a risk rating model to identify trees and locations vulnerable to personal injury and property damage caused by storms.</b>	
<b>Total STAPLEE Score</b>	Hurricanes and Tropical Storms
<b>Primary Hazard</b>	4
<b>Status</b>	New
<b>Responsible Department</b>	Public Works
<b>Timeframe</b>	7/2020-6/2022
<b>Estimated Cost</b>	\$10,000 - \$50,000
<b>Potential Funding Sources</b>	Operating Budget / Grants

## Strategy #SC3

<b>Implement a project to map the near shore sand and sediment transport to develop a sand-budget model for monitoring island wide coastal erosion. Side scan sonar will be used to measure bathymetry in extremely shallow water, between 0 and 20 ft. deep. Mapping in high resolution monitors the movement of sand shoals and identifies location of marine habitat on the sea floor.</b>	
<b>Total STAPLEE Score</b>	Sea Level Rise, Shoreline Change, and Erosion
<b>Primary Hazard</b>	4
<b>Status</b>	New
<b>Responsible Department</b>	Planning & Land Use Services
<b>Timeframe</b>	7/2021-6/2023
<b>Estimated Cost</b>	More than \$100,000
<b>Potential Funding Sources</b>	Grants

## Strategy #SC4

<b>Implement a project to map the harbor floors (Madaket, Polpis and Nantucket) to measure and monitor sediment transport. Information will be used to develop dredging and disposal plan, as well as the Harbor management Plan. Side scan sonar will be used to measure bathymetry in extremely shallow water, between 0 and 20 ft. deep.</b>	
<b>Total STAPLEE Score</b>	Sea Level Rise, Shoreline Change, and Erosion
<b>Primary Hazard</b>	4
<b>Status</b>	New
<b>Responsible Department</b>	Planning & Land Use Services
<b>Timeframe</b>	7/2021-6/2023
<b>Estimated Cost</b>	More than \$100,000
<b>Potential Funding Sources</b>	Grants

# Town of Nantucket Prioritized Hazard Mitigation Strategies

## Strategy #A2

<b>Provide Incident Command System training to essential staff</b>	
<b>Total STAPLEE Score</b>	All
<b>Primary Hazard</b>	3
<b>Status</b>	New
<b>Responsible Department</b>	Emergency Management
<b>Timeframe</b>	7/2018-6/2023
<b>Estimated Cost</b>	Less than \$10,000
<b>Potential Funding Sources</b>	Operating Budget

## Strategy #A18

<b>Develop a public outreach program that target public school teachers and students (K-12) and works to add appropriate climate science, sea level rise, hazard mitigation and coastal resilience planning to the curriculum.</b>	
<b>Total STAPLEE Score</b>	All
<b>Primary Hazard</b>	3
<b>Status</b>	New
<b>Responsible Department</b>	Nantucket Public Schools
<b>Timeframe</b>	7/2020-6/2022
<b>Estimated Cost</b>	\$10,000 - \$50,000
<b>Potential Funding Sources</b>	Operating Budget

## Strategy #F12

<b>Extend the above height exception to any building elevating its first floor for flood mitigation purposes, even if outside current flood zone.</b>	
<b>Total STAPLEE Score</b>	Flooding
<b>Primary Hazard</b>	3
<b>Status</b>	New
<b>Responsible Department</b>	Planning & Land Use Services
<b>Timeframe</b>	7/2019-6/2021
<b>Estimated Cost</b>	Less than \$10,000
<b>Potential Funding Sources</b>	Operating Budget