



Town of Edgartown Community Resilience Building Workshop Summary of Findings



April 2019

PREPARED FOR:
Executive Office of Energy and Environmental Affairs
Municipal Vulnerability Program (MVP)

PREPARED BY:
Woods Hole Group, Inc.
A CLS Company
107 Waterhouse Road
Bourne, MA 02532 USA

Table of Contents

Overview:	1
Top Hazards and Vulnerable Areas.....	3
Current Concerns and Challenges Presented by Hazards.....	6
Specific Categories of Concerns and Challenges.....	7
Current Strengths and Assets	8
Top Recommendations to Improve Resilience	9
CRB Workshop Participants	14
CRB Workshop Project Team	15
Recommended Citation	15
Acknowledgements.....	15
Appendix A: Workshop Base Map	16
Appendix B: Participatory Mapping Results	17
Appendix C: Edgartown Risk Maps Used During Workshop.....	22
Appendix D: Massachusetts Updated Climate Projections.....	29
Appendix E: Listening Session Public Comments.....	37

Town of Edgartown

Community Resilience Building Workshop

Summary of Findings

Overview:

The need for municipalities, local and regional planning organizations, states, and federal agencies to increase resilience and adapt to extreme weather events and natural hazards has become strikingly evident among coastal Massachusetts communities. Recent events, such as the successive March 2018 nor'easters that brought serious wind damage and flooding to the area, have reinforced this urgency and sparked communities like the Town of Edgartown to proactively plan for and mitigate potential risks to the Town through a community driven process. Once implemented, resilience building actions developed through this process will reduce the vulnerability of Edgartown's citizens, infrastructure, and ecosystems, and serve as a model for communities across the Commonwealth of Massachusetts and the Nation.

In the summer of 2018, with funding from the Executive Office of Energy and Environmental Affairs Massachusetts Municipal Vulnerability Preparedness (MVP) Program, the Town of Edgartown contracted with the Woods Hole Group to implement the Community Resilience Building process. A municipal-based core team was established to organize and implement an 8-hour Community Resilience Building (CRB) Workshop on December 6, 2018. The goal of this effort was to engage community stakeholders to facilitate the education, planning, and implementation of priority adaptation actions. The list of workshop invitees and workshop content was guided by input from an interdisciplinary working group comprised of Town staff and consultants from Woods Hole Group. The Workshop's central objectives were to:

- Define top local natural and climate-related hazards of concern;
- Identify existing and future strengths and vulnerabilities;
- Develop prioritized actions for the Community;
- Identify immediate opportunities to collaboratively advance actions to increase resilience.



Figure 1: Small group participants discuss vulnerable features along the Edgartown coast.

Thirty-nine (39) participants from town departments/committees/boards, community organizations, and local businesses attended the workshop, which employed a community-driven workshop process following the CRB framework ([www. CommunityResilienceBuilding.com](http://www.CommunityResilienceBuilding.com)). The CRB's Risk Matrix format, large-scale maps of Town (Appendix A & B), and various datasets on natural hazards (Appendix C & D) were integrated into the workshop process to provide both decision support and risk visualization for workshop participants. The workshop included a combination of large group presentations and small group discussions. The large group presentations were provided to outline the workshop process/goals, present relevant hazard and community data, share example actions, and provide an update on local planning efforts and non-profit initiatives. The small group discussions offered participants an opportunity to work together in teams of ~8 people (each with different roles, responsibilities and expertise) to foster an exchange of ideas and perspectives. The first small group discussion focused on identifying infrastructural, societal, and environmental features within the Town, along with corresponding ownership. The afternoon small group discussion focused on prioritizing features, developing resilience building actions, designating priorities and timelines for each of the action, and determining the top actions for each group. After each small group discussion, spokespersons from the small groups then reported their findings back to the larger group.

This workshop process, rich with information, local experience, and dialogue from the participants produced the findings detailed in this summary report. This report provides an overview of the top hazards, current concerns and challenges, current strengths and vulnerabilities, and recommends actions to improve Edgartown's resilience to natural and climate-related hazards today and in the future.

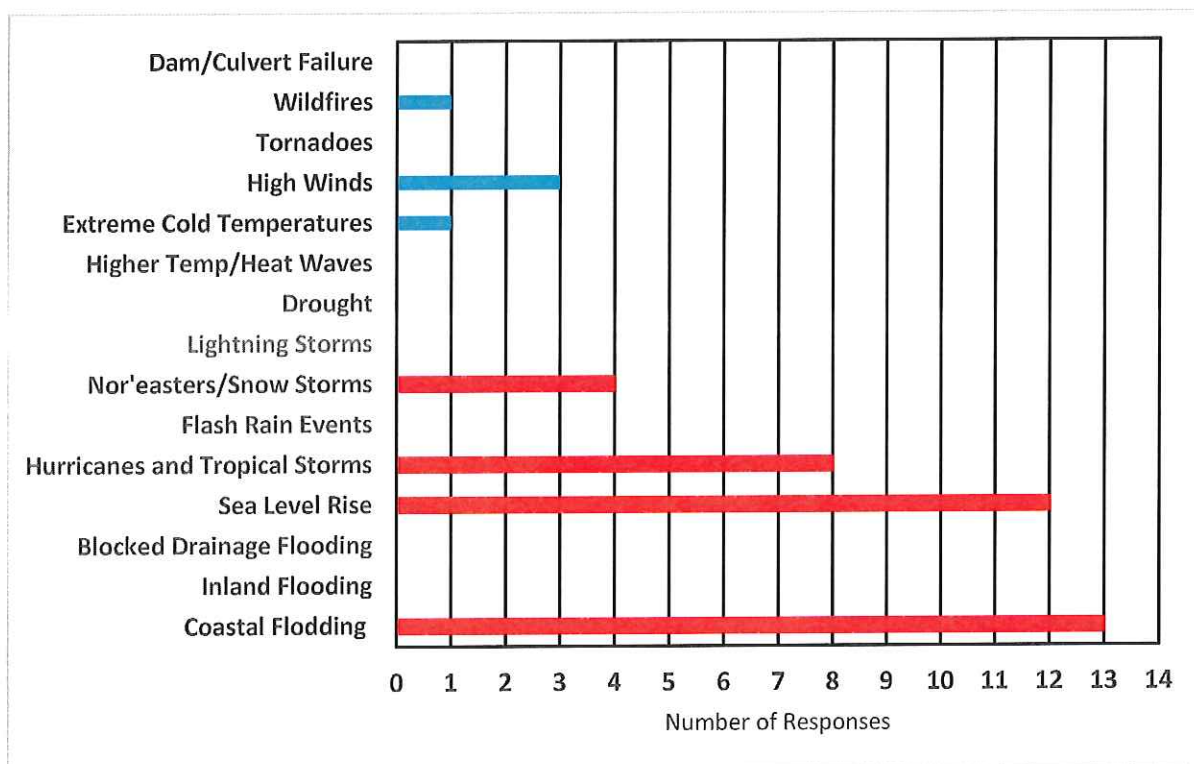
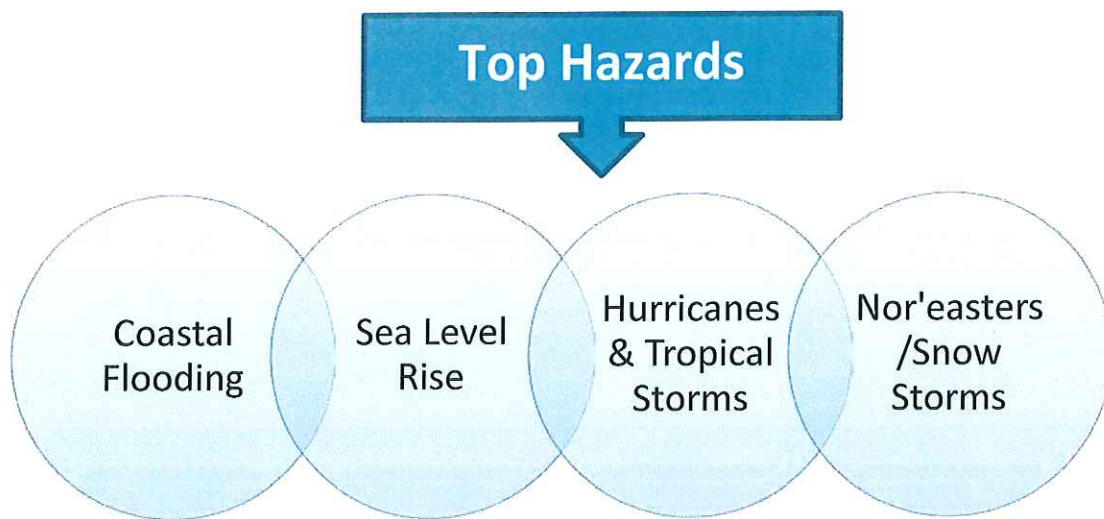
Workshop participants and other interested stakeholders are encouraged to provide comments, corrections, and updates on the summary of findings described in this report. The Town of Edgartown's ongoing community resilience will benefit from the participation of all those concerned.



Figure 2: The Red Group included the Zoning Department, the Fire Chief, the Department of Conservation and Recreation, the Town IT administrator, and representatives from Mass Audubon.

Top Hazards and Vulnerable Areas

Prior to the CRB Workshop in December 2018, invited workshop participants were asked to identify the top natural hazards for the Town of Edgartown as part of a pre-workshop online survey. Coastal flooding from intense storms and coastal storm surge, as well as projected Sea Level Rise were identified by participants as top hazards for the Town of Edgartown. Major storms, such as nor'easters, snowstorms, hurricanes and tropical storms were also identified as hazards of greatest concern.



Vulnerable Areas

Neighborhoods: Chappaquiddick Island, Lower Main Street/Dock Street Tourist Area, Katama Bay, South Beach.

Populations: Aging and elderly populations, large seasonal fluctuation in resident/tourist population, homeless.

Ecosystems: Coastal beaches (Norton Point Beach, State Beach, Fuller Street Beach), salt marshes (Felix Neck, Sengekontacket, Chappy), shellfish habitat, Manuel F. Correllus State Forest, endangered bird species. nesting habitat (terns/plovers).

Transportation: Edgartown Harbor, Chappy Ferry, Steamship Island Ferry, Katama Airport, town landings.

Infrastructure: Coastal roads (Beach Rd, Atlantic Drive), Dock Street, Dock Street Sewer Pumping Station, Edgartown Harbor Lighthouse, septic systems, overhead electricity and utility wires, cell phone towers, culverts (Bend in the Road/Sengekontacket Pond, Planting Field Way, Edgartown/West Tisbury Road), wharves and harbor waterfronts (Public, North, Dock St).

Facilities: Town Hall, Church homeless shelters, Stop & Shop Grocery, Medical Clinic, buildings along Dock Street, Edgartown Fire and Police Stations.



Figure 3: Edgartown tourist area consisting of Lower Main Street, Dock Street, and Public and Dock Street Wharves.

Current Concerns and Challenges Presented by Hazards

The Town of Edgartown has many concerns and faces multiple challenges related to the impacts of natural hazards. In recent years, Edgartown has experienced a series of highly disruptive and damaging weather events which included three successive Nor'easters in March 2018. The damage from recent Nor'easters included significant coastal flooding and erosion due to heavy surf and storm surge, boats breaking from moorings, and damaged structures and blocked roadways as a result of downed trees due to high winds. The frequency of these storms in March 2018 exacerbated the impacts, as the Town was still recovering from the last storm when the next one arrived. The magnitude and severity of the impacts of these storms produced a heightened level of awareness in Town and provided additional motivation to comprehensively improve resilience and reduce local vulnerabilities to natural hazards.



Figure 4: The harbor waterfront along Dock St. under water during the March 2018 Nor'easters.

This series of extreme weather events highlighted that impacts from hazards are felt differently across the Town from the low-lying coastal areas to the forested uplands to the more developed downtown area. The northern and eastern shores of Edgartown are surrounded by Nantucket Sound, while the southern coast of Edgartown is exposed to the Atlantic Ocean. This geographic setting exposes Edgartown to damage from coastal flooding, coastal erosion and storm surge. The forested inland areas experience the effects of tree damage from wind, snow and ice, and inland flooding along roads due to poor drainage. The combination of these issues presents a challenge to emergency preparedness and response, and requires comprehensive yet tailored actions for establishing mitigation priorities for different areas of Town.

The workshop participants were generally in agreement that the Town of Edgartown is experiencing more intense and frequent storms. The impacts, particularly during the series of March 2018 nor'easters,



Figure 5: Flooding and overtopping of the Dike Bridge on Chappaquiddick Island during the March 2018 Nor'easters

affected the daily activities of every resident. Coastal areas are experiencing greater impact from major storms and increases in average tidal ranges are resulting in routine flooding events in certain low-lying places during lunar high tides. Additionally, there was a general concern that a long-range plan needed to be developed for how to manage the Chappy Ferry infrastructure, in the face of ongoing storm damage and sea-level rise, as well as developing a better Town-wide emergency and evacuation preparedness strategy.

Specific Categories of Concerns and Challenges

Edgartown's Road and Transportation Network

One of the primary concerns expressed by participants was the vulnerability of the Town's road network, specifically low-lying coastal roads, bridges, and boat landings. These roadways and bridges are threatened by the increasing hazards presented by flooding, sea-level rise and coastal storm damage. Atlantic Drive, Beach Road, Bend in the Road/State Beach Rd, Chappy Rd, Dock Street, Main Street were all mentioned as roads that are vulnerable to flooding. Debris and sand are often washed up onto the roads preventing travel as well as emergency management services from reaching impacted areas. Another primary concern discussed by each group was the vulnerability of the Chappaquiddick Ferry infrastructure (landings) to flooding. The Chappy Ferry landings are a vital transportation link for travelers between Edgartown and Chappaquiddick Island. During the March 2018 Nor'easters the Chappy Ferry landings were underwater multiple times.

Flood Damage and Disruption

Flooding, whether caused by coastal storm surge or excessive rainfall, presents a major threat to the Town's infrastructure, facilities, neighborhoods, and individual homes and property. Recent flooding events have prompted participants to consider the future impact of coastal flooding events when exacerbated by sea-level rise. Of particular concern are the effects that coastal flooding has and will have on roads and coastal neighborhoods. These events inundate and isolate certain areas from the rest of Town and making it difficult for first responders and other services to access those areas during emergencies. Parts of downtown Edgartown (Main St. & Dock St.) are also vulnerable to flooding during a major coastal storm event. Other major locations that experience flood damage and disruption are Chappy Ferry and Bend in the Road. Participants of the workshop also expressed concerns regarding excess nutrients and toxins in flood waters that runoff into nearby waterways, Edgartown Harbor, for example.

Evacuation Plan and Emergency Response

Many participants expressed concerns about evacuation and emergency response in Edgartown and Martha's Vineyard in its entirety. Martha's Vineyard, as a whole, relies on the Steamship Authority to transport people, supplies, and goods from the mainland. Martha's Vineyard also relies on a buried underwater cable which provides electricity and other utility services (cable & cell phone). Participants were very concerned how these hazards could impact the functioning of the entire island. For instance, if the Steamship Authority is forced to stop operations because of the occurrence of a large Nor'easter or other hazard, Edgartown may experience a shortage in supplies and food. Another concern regarding the effectiveness of the evacuation plan is the seasonal population fluctuation in Edgartown. Edgartown experiences a large seasonal population increase in the summer which can pose a challenge when trying to evacuate everyone and respond to emergencies safely.

Beach and Coastal Erosion

Participants also identified ongoing erosion along Edgartown's coastline as a point of concern. Town beaches of particular concern include Fuller Street Beach, Norton Point Beach, South Beach, and State Beach. Edgartown's coastline is not only inherent to the character of the Town, but these beaches also provide valuable tourism and recreational benefits, vital habitat for wildlife, and provide the first line of defense against coastal storms, flooding, wave action and storm surge.

Current Strengths and Assets

As a result of Edgartown's recent experiences with extreme weather, the Town is well acquainted with its existing strengths. Reinforcing and expanding these supportive practices and assets will improve resilience against future storms, with greater frequencies and intensities. Additional planning will help the Town address anticipated increases in storm surge, sea-level rise, and precipitation.

- Key facilities in Town have proven to be important strengths for the Town of Edgartown. Participants highlighted the police station, fire station, Edgartown school, and the Edgartown public library as critical facilities that provide residents with vital amenities and services but could also function as emergency shelters during and following a hazard event.
- Responsive and committed Town leadership and staff are an important asset to Edgartown, both in day-to-day operations, as well as during and immediately following a natural hazard or an emergency event. Public outreach and communication through the local TV station were highlighted as important strengths. In addition, many of the emergency responders and Town personnel have been Edgartown residents their whole life and have a strong commitment to the effective management and protection of the Town and its residents.
- Volunteerism and supportive social services provided by Council of Aging was highlighted as an important community asset. These services often provide vital support to elderly or vulnerable populations in Town, especially during a hazard.
- Salt marshes and beaches along Edgartown's coasts were recognized as an important buffer, offering the first line of defense against storms through storm surge attenuation and reduction of wave energy. Without these natural resources in place, the Town's coastal and inland infrastructure and homes would suffer greater damage during storm events.
- Edgartown's tourism industry was highlighted by many participants as an important strength. During the summer tourism season, Edgartown experiences an influx of summer visitors which prove vital to the Edgartown economy. Participants support efforts to further strengthen the tourism economy of the town in response to hazards.

Top Recommendations to Improve Resilience

A common thread throughout the Workshop discussions was the recognition that the Town and residents need to be better prepared through longer-term, community-based, contingency planning across key areas of concern. This and additional core highlights are addressed below. The following were the top actions selected by workshop participants.

1. Conduct a feasibility study for increasing resiliency of Chappy Ferry Infrastructure

In March of 2018, Edgartown experienced three Nor'easters over the span of two weeks and experienced high winds, coastal flooding, and loss of power. In particular, the Chappy Ferry infrastructure (landings and ramps), which is located in a low-lying area, was flooded by these storms. Chappy Ferry provides a critical transportation link between the Town of Edgartown and Chappaquiddick Island and workshop participants highlighted the importance of increasing its resiliency in the face of climate change, storm surge, and other hazards. Participants feel there is a need to create an advisory group or committee to conduct a feasibility study for increasing the resiliency of the Chappy Ferry Infrastructure. Some tasks the feasibility study might address would be to understand all of the risks from flooding and storms to the Chappy Ferry infrastructure, to allocate money for the long-term resiliency management, and identify alternative solutions which may include the re-engineering and/or relocation of the Chappy Ferry.

2. Develop a Beach Management Plan for Town beaches

Given the threat that flooding, sea-level rise, coastal erosion, and Nor'easters pose to Edgartown's coastal areas, and given the impacts already experienced by the Town's beach dune systems in recent years, workshop participants felt it was critical to develop a comprehensive beach management plan. Workshop participants identified parking access, coastal shoreline retreat and erosion, Edgartown Harbor channel dredging, beach nourishment, grass plantings, and general dune enhancements as essential components that should be addressed in the Beach Management Plan. Particular Edgartown beaches in consideration include East Beach, Fuller Street Beach, Little Beach, Norton Point Beach and State Beach.

3. Create a comprehensive conservation and protection plan for wetlands and waterways

With Edgartown being surrounded by water on three sides, Edgartown's coastal areas are exposed to the impacts of Nor'easters, coastal erosion, flooding and large rain events. Participants understand that wetlands, salt marshes, and waterways in their coastal areas act as important buffers to hazards and stated that these areas should be conserved and further protected. For instance, they were concerned of the potential degradation of water quality due to the stormwater runoff and excess nutrients entering the local waterways. The potential of land surrounding wetlands and saltmarshes being developed was also a concern. Participants stated that re-assessing the existing living shoreline infrastructure and its ability to protect the shoreline after the 2018 winter Nor'easters was important. For these reasons, the participants identified the need to create a comprehensive conservation and protection plan for wetlands and waterways to address water quality, ability to acquire lands for conservation and assessment of its living shoreline infrastructure.

4. Develop a detailed Coastal Vulnerability Assessment for municipality resiliency

Throughout the workshop, it was evident that residents, business-owners, and Town officials are well aware of the current and future vulnerabilities throughout the Town, especially to sea level rise and storm surge hazards. Participants acknowledged that a more detailed and granular understanding of the degree to which Town assets (e.g. buildings, infrastructure, roads, marshes, beaches, etc) will be vulnerable to these top hazards considering climate change was needed in order to adequately plan allocate resources for adaptation. They also highlighted the importance of tourism to the Town of Edgartown and were concerned about economic consequences from the impacts of climate change, sea-level rise and other hazards. Like any town, Edgartown has limited resources (e.g. time, logistics and budget) and cannot realistically complete every project on their “to-do” list. Thus, it is crucial to Edgartown’s strategic planning to understand which assets are most vulnerable and have significant consequences both functionally and economically, such that actions to reduce vulnerability may be prioritized and phased over time. Therefore, the Town highlighted the need to develop a detailed climate change vulnerability assessment which would prioritize all the town’s assets-- both infrastructural and environmental—in terms of the site-specific vulnerability to sea level rise and storm surge and the consequence of loss to the community.

5. Assessment of the town/county wide emergency communication system.

In the event of a storm where the town loses power, tele-communications or other utilities (cell towers, telephone wires) become non-operational it is increasingly important for emergency services to be effective. Being that Edgartown is on an island, the participants expressed a heightened interest in increasing the effectiveness of emergency communications and alert services town wide. Currently, the town operates on older radios and, according to participants, the town antenna is located in a vulnerable area. For these reasons participants are seeking to assess the effectiveness of the current communication system and develop a plan for the improvement and future needs of the communication system. The plan could include the integration of the towns communication system on a county wide basis, the purchase of new and more effective radios, and the relocation of the town antenna.

6. Develop and coordinate a comprehensive, island-wide, emergency preparedness, response, and recovery plan.

Life on an island can make everyday activities more difficult. A functioning Edgartown depends on Cape Cod and the Mainland for a lot of services. Food, fuel, supplies, and tourism depend on the operations of the Steamship Authority ferry boats for delivery, and a majority of electricity and utility services depend on a buried cable connected to the mainland. In the event of a nor’easter, tropical storms, or other hazards this link to the mainland and the services that are provided could be disrupted. Participants expressed concerns about food, fuel and supplies shortages if deliveries are cancelled or disrupted, not just in Edgartown but throughout Martha’s Vineyard. Evacuations and emergency response services would also be greatly affected in the event of complete isolation from storms and other hazards. Even if deliveries to the island are possible, there were still discussions about the flooding of coastal roads leading to Edgartown that would still prevent the delivery of vital supplies. These concerns are exacerbated for Chappaquiddick Island in that is separated from Edgartown let alone the Cape Cod mainland which can further complicate

emergency and evacuation services. For this reason, participants of the workshop mentioned the need for a comprehensive, island-wide, emergency preparedness, response, and recovery plan. This island-wide cooperative comprehensive plan would include an education strategy and would address specific areas including food supply, water supply, emergency shelter, and fuel in the event of coastal hazards.

7. Develop a planning action plan focusing on the population dynamics of Edgartown

The effectiveness of emergency response and other societal services can greatly depend on the number of people they are serving. An inadequate amount of services for the population can put people's lives at risk especially in the event of a Nor'easter, hurricane or other hazard. In the case of Edgartown, the population of year-round residents is significantly less than the population during the summer tourism season. Participants of the workshop believe a planning document is needed to understand the seasonal population, the carrying capacity of Town infrastructure and how effective the emergency response plans are in regards to the peak summer population.

8. Develop a State Land Management plan to reduce wildfire vulnerability

In the past, Edgartown has seen the impact that high winds can have on local trees. Felled trees can topple on telephone wires or damage roofs if they fall on a house. Alternatively, in areas that have large stances of trees like upland forests and woodlands, there is the possibility of post-storm accumulation of fuel increasing the risk of wildfires. The Manuel F. Correllus State Forest is located within the town boundaries of Edgartown and many groups from the workshop expressed the concern of this post-storm accumulation. Many groups during the workshop mentioned the possibility of creating a State Land Management Plan in concert with other land management organizations to reduce the amount of fuel accumulation and purchasing equipment and labor to implement the plan.

9. Perform a wastewater and sewer infrastructure assessment

Another concern voiced by workshop participants centered around wastewater and sewer infrastructure and the potential damage and impact that sea level rise, flooding and other hazards can have on their operations. A disruption of wastewater and sewer operations could affect the safe treatment of wastewater posing a large health risk to the public. Workshop participants propose an assessment of all wastewater and sewer related infrastructure with a suggestion of upgrading or retrofitting any infrastructure that could be at risk to hazards. In particular, participants highlight the Dock St wastewater pump station as one such location where retrofit/upgrading is needed.

10. Conduct a long-term feasibility study to maintain accessibility through the Town Harbor

Maintaining access through the Town Harbor was another concern brought up by workshop participants. The Town harbor is a navigation channel that is important for many different activities. However, the Town harbor is also adjacent to Lighthouse Beach and Fuller Street Beach which are experiencing coastal erosion. Through various sedimentation processes sand is transported along the shore and deposited into the navigational channel. This process can greatly impact the operations of this harbor which is why workshop participants suggest a long-term feasibility study to maintain accessibility through the Town Harbor. The feasibility study should include alternative solutions (e.g. Groins to protect the channel), potential bathymetry studies to better understand the channel bed, and determine the feasibility of dredging the channel. If this

action determines that dredging is an option, a positive outcome of this action could be the utilization of any dredge materials for nourishment projects that may be described in the Beach Management Plan.

11. Develop a plan to transition neighborhoods using onsite wells to Town water and sewer

Another concern that workshop participants discussed was sources of water and protecting the freshwater aquifers especially for residents who are on wells. Participants suggested transitioning neighborhoods that are using onsite wells to connect to Town water and sewer. In particular, some residents highlighted Chappaquiddick Island as an example of an area that should be moved to town water. To assess this particular need for Chappy, a strategy to prioritize each well should be implemented which would include the testing of individual wells. Participants acknowledge that running town services (i.e. water) to Chappy is possible, but fell short of finding successful funding sources.

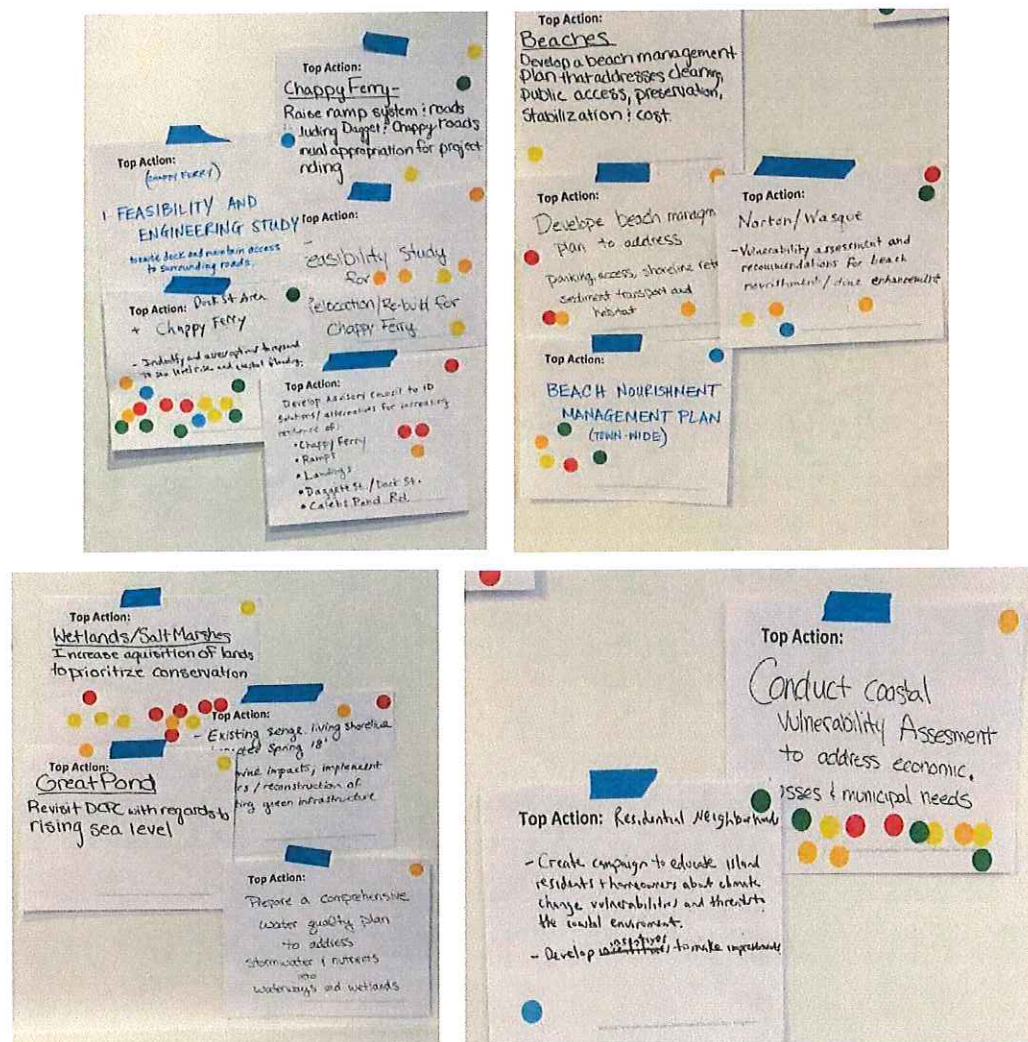


Figure 6: Some of the top actions that workshop participants voted for at the conclusion of the workshop

In addition to the top priority actions voted on by the workshop participants, the participants also developed a larger series of recommended actions, which they prioritized into “high”, “medium” and “low” priority actions:

Other High Priorities

- Explore and Identify alternative sources of freshwater for sole-source aquifer and increase resiliency of existing water sources and infrastructure.
- Officially designate the Chappaquiddick Community Center as an emergency center and include in the emergency management plan.

Medium Priorities

- Create plan to maintain access to Norton Point.
- Conduct a study to improve storm drains and possibly include filters.
- Evaluate all existing utility infrastructure and possible improvements. May include burying wires and maintaining the poles which lead to houses on Chappaquiddick.
- Revisit DCPC (District of Critical Planning Concern) with regards to rising sea level.
- Develop an open space management plan
- Revitalize Barrier Beach Task Force in regards to Sylvia State Beach
- Conduct study to evaluate recreational shellfish resources in town, which includes predator control and shellfish seeding in regards to rising sea level particularly in Katama Bay.
- Create a shelter plan, an awareness campaign, and install air conditioning for the Edgartown School.
- Create a campaign to educate Island residents and home-owners about climate change vulnerabilities and threats to the coastal environment. Include incentives for residents and home-owners for participation and/or improvements.
- Identify opportunities to increase expansion of EDG Elementary School (shelter), purchase additional beds and supplies

Low Priorities

- Start a water quality program for beaches and harbors where water is tested regularly
- Acquire a generator for the Chappaquiddick community center

CRB Workshop Participants

Below is a table of workshop participants.

Name	Department/Affiliation	Name	Department/Affiliation
Bruce McNamee	Police Chief	Launne Johnson	Biodiversity Works
Peter Wells	Chappy Ferry	Eunic Youmans	Trustees of Reservations
Peter Vincent	Conservation Com.	Bill Veno	Martha's Vineyard Com
Sydney Mullen	Chappy Beach Club	James Hagerty	Town Administrator
Charlie Blair	Harbormaster	Matt Poole	Health Agent
Kristen Fauteux	Sherriff's Meadow Fd.	Jess McGroarty	Parks Administrator
Juliet Mulinare	Edg Procurement	Dudley Levick	Dredge Committee
Adam Turner	Martha's Vineyard Com	Reade Milne	EDG Building Inspector
Mark Lovewell	Resident	Paul Mohair	Council on Aging
Sally Snipes	Chappy Ferry	Liz Baldwin	Biodiveristy Works
Alex Schaefer	Fire Chief	Susanne Bellincampi	Resident
Chris Bruno	Dept. Cons. And Rec.	Jane Varkonda	Conservation Agent
Peter Getsinger	Sherriff's Meadow Fd.	James Cisek	Planning Board
Adam Darack	Town IT	Chris Kennedy	Trustees of Reservations
Josey Kirkland	Mass Audubon	Bill Chapman	EDG Water Dept.
Richard Knight	Zoning	Roland Georges	Winnetu Resort
Stephen Jones	Phys. for Civil Defense	Alison Levi	Journalist
Christina Brown	Martha's Vineyard Com	Emma Green-Beach	MV Shellfish Group
Paul Bagnall	Shellfish Warden		
Ed Handy	EDG Dredge Comm		
Doug Finn	EDG Planning Board		

Below is a table of additional personnel that were invited but were unable to attend.

Name	Department/Affiliation
Micah Agnoli	EMT/Fire Services
Steve Ewing	Aquamarine Dock Builders
Stuart Fuller	Highway superintendant
Karen Tewhey	Associate Commissioner for the Homeless
Kara Shemeth	Resident- Paramedic

CRB Workshop Project Team

Town of Edgartown:

Jane Varkonda, Conservation Agent (Project Lead – Principal Contact)
Suzanne Cioffi, Vineyard Transit (Core Team Member)
James Hagerty, Town Administrator (Core Team Member)
Micah Agnoli, EDG Fire Dept. (Core Team Member)
Jessica McGroarty, EDG Park Dept. (Core Team Member)
Charlie Blair, Harbormaster (Core Team Member)
Kara Shemeth, Resident (Core Team Member)
Alex Schaeffer, EDG Fire Dept. (Core Team Member)
Bruce McNamee, EDG Police Dept. (Core Team Member)
Stuart Fuller, Highway Superintendent (Core Team Member)

Woods Hole Group:

Brittany Hoffnagle (Lead Facilitator)
Tara Marden (Small Group Facilitator)
Beth Gurney (Small Group Facilitator)
Adam Finkle (Small Group Facilitator)
Kali Roberts (Small Group Facilitator)

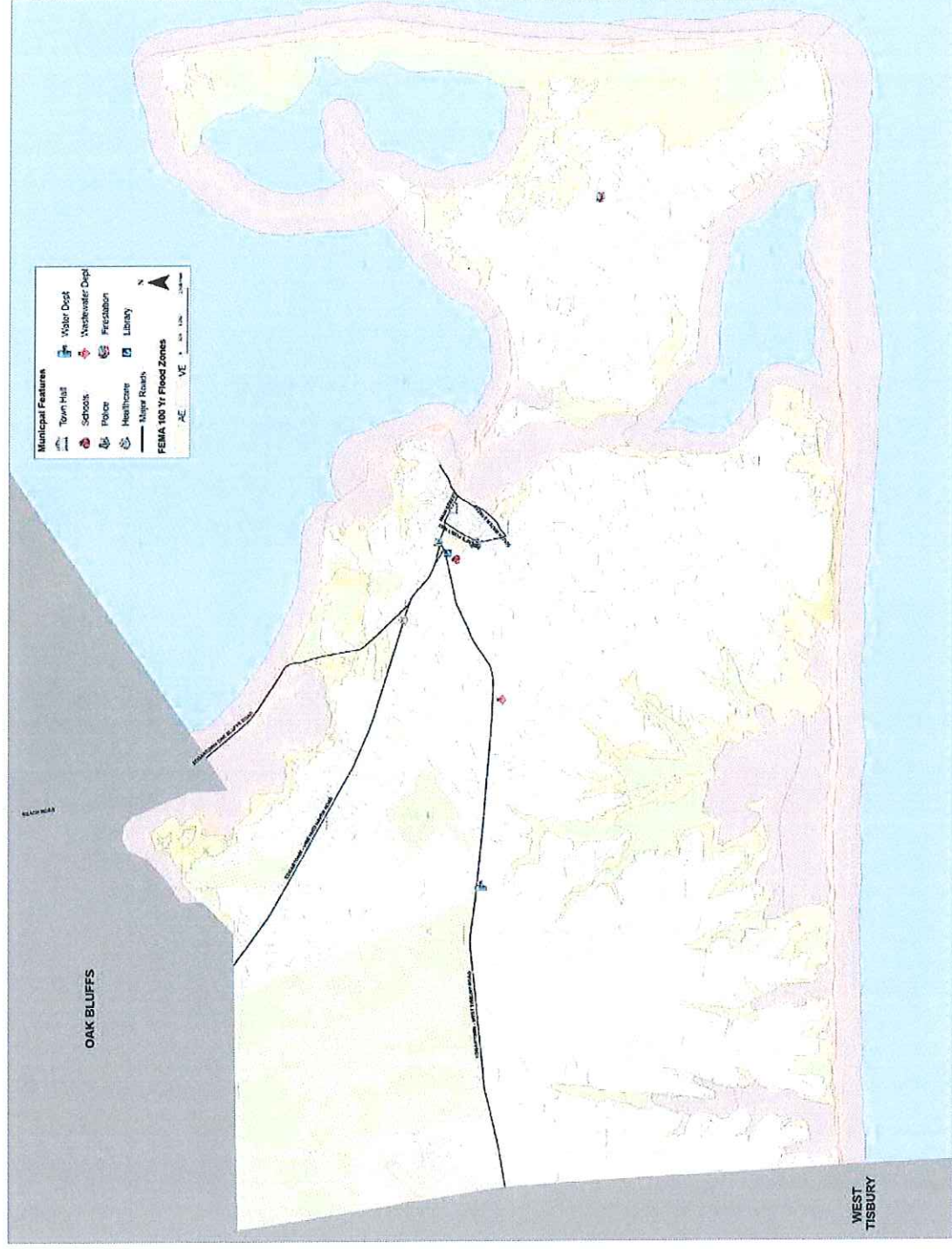
Recommended Citation

Town of Edgartown (2018) Community Resilience Building Workshop Summary of Findings. Coastal Resiliency Action Committee, the Woods Hole Group. Edgartown, Massachusetts.

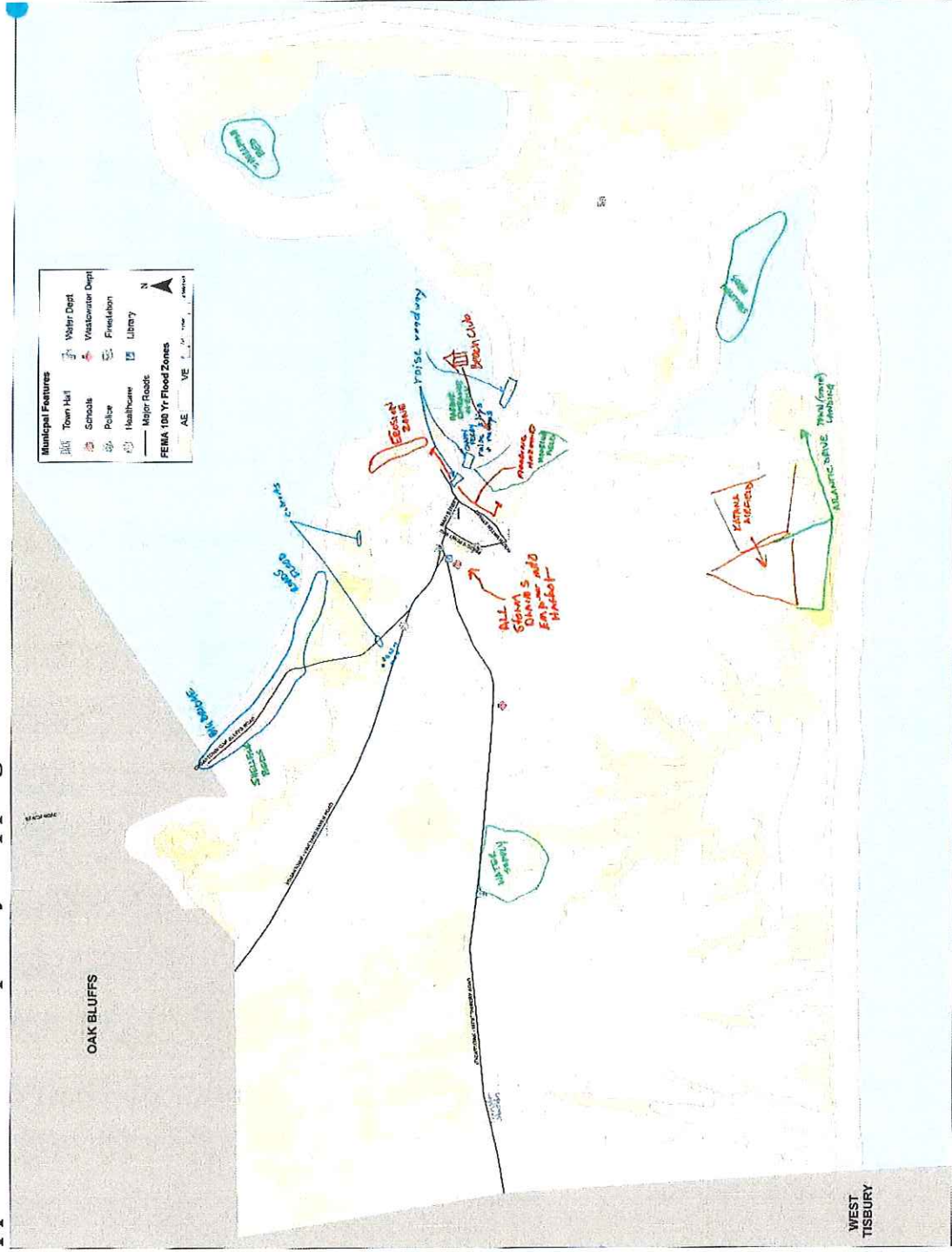
Acknowledgements

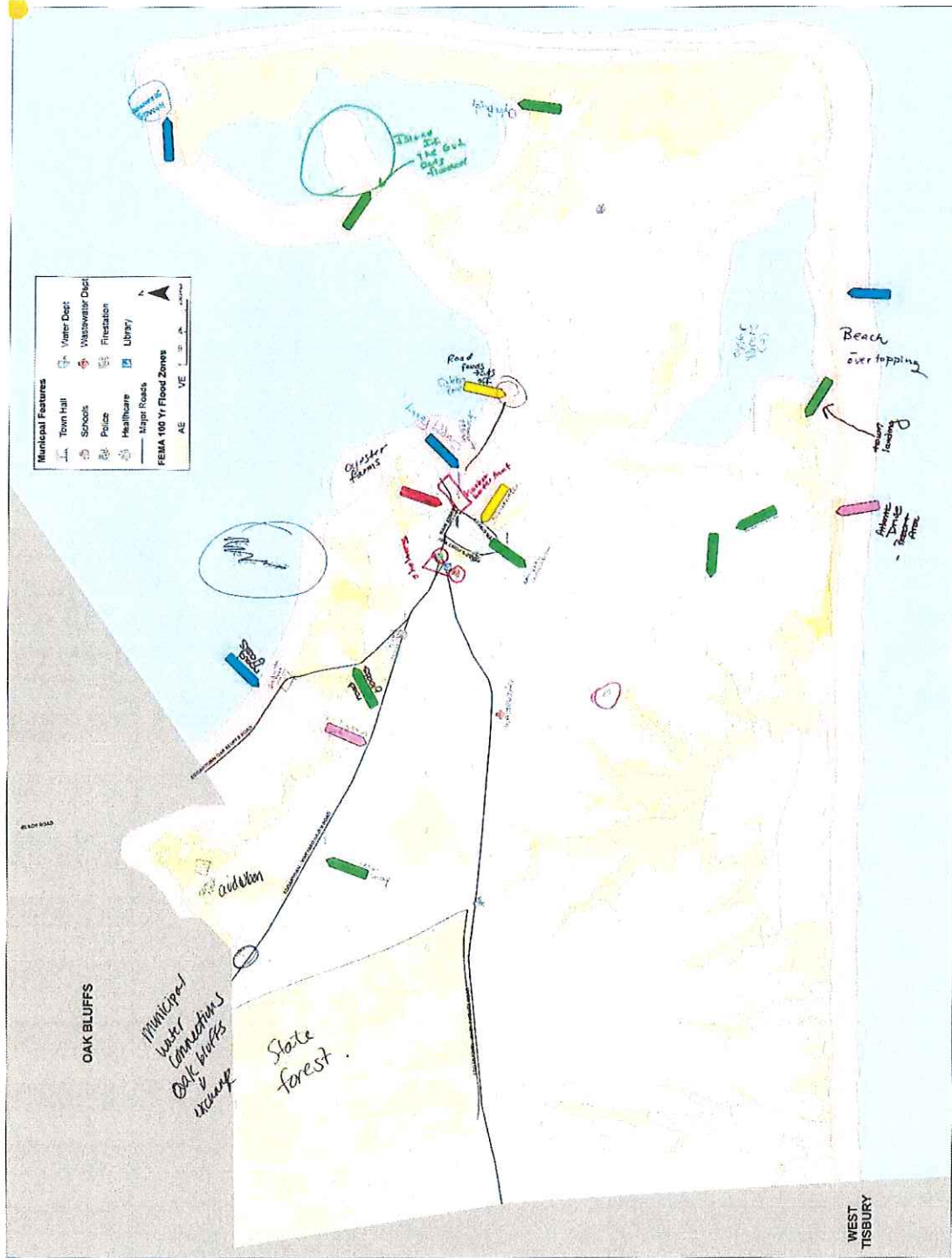
Special thanks to the Town of Edgartown for their willingness to embrace this process and engage a good cross section of participants. Thanks to the MVP Team members, CRB workshop participants and to Jane Varkonda who served as local Project Coordinator. Thank you to the Old Whaling Church for providing the space to hold the CRB workshop. This project was made possible through funding from the Executive Office of Energy and Environmental Affairs' Municipal Vulnerability Preparedness (MVP) Grant Program.

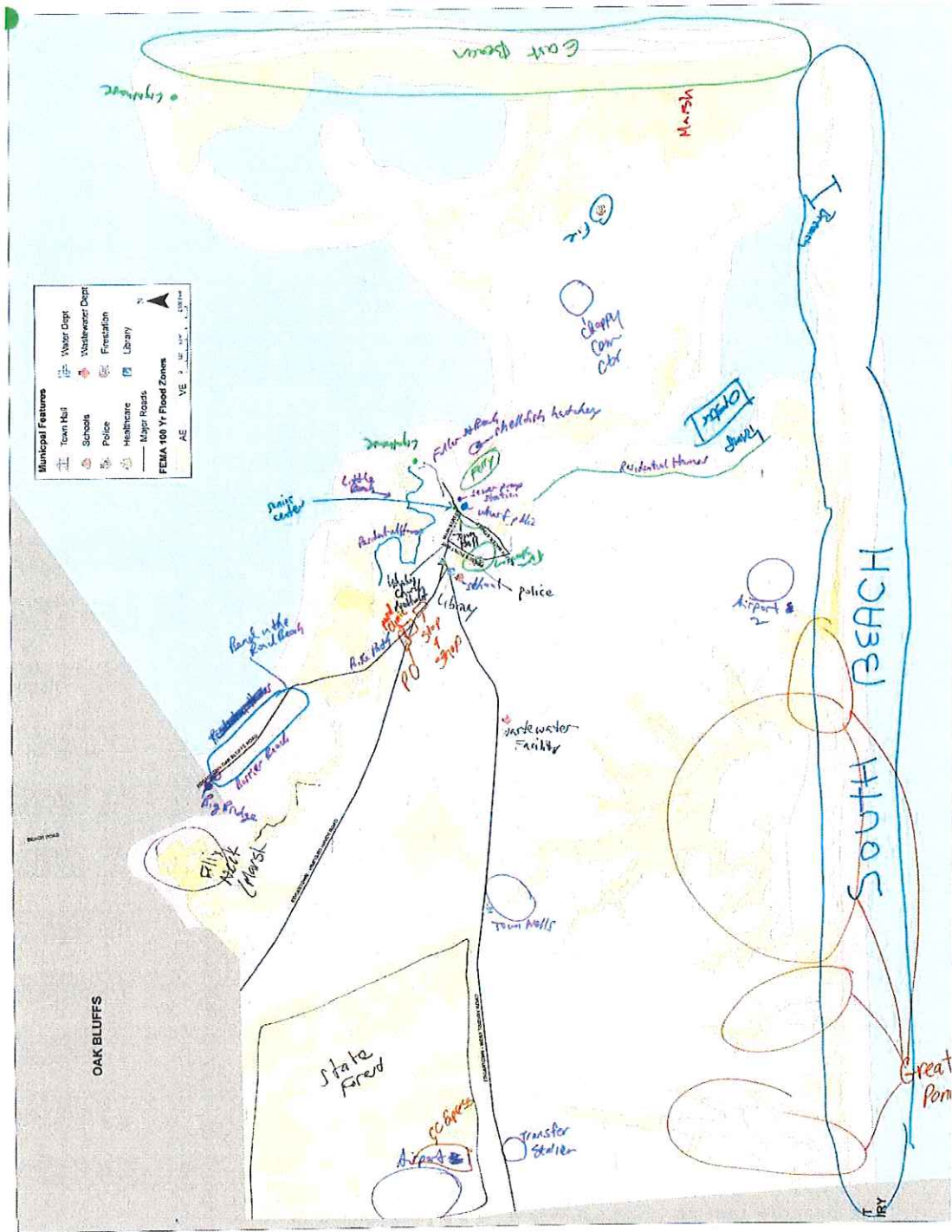
Appendix A: Workshop Base Map

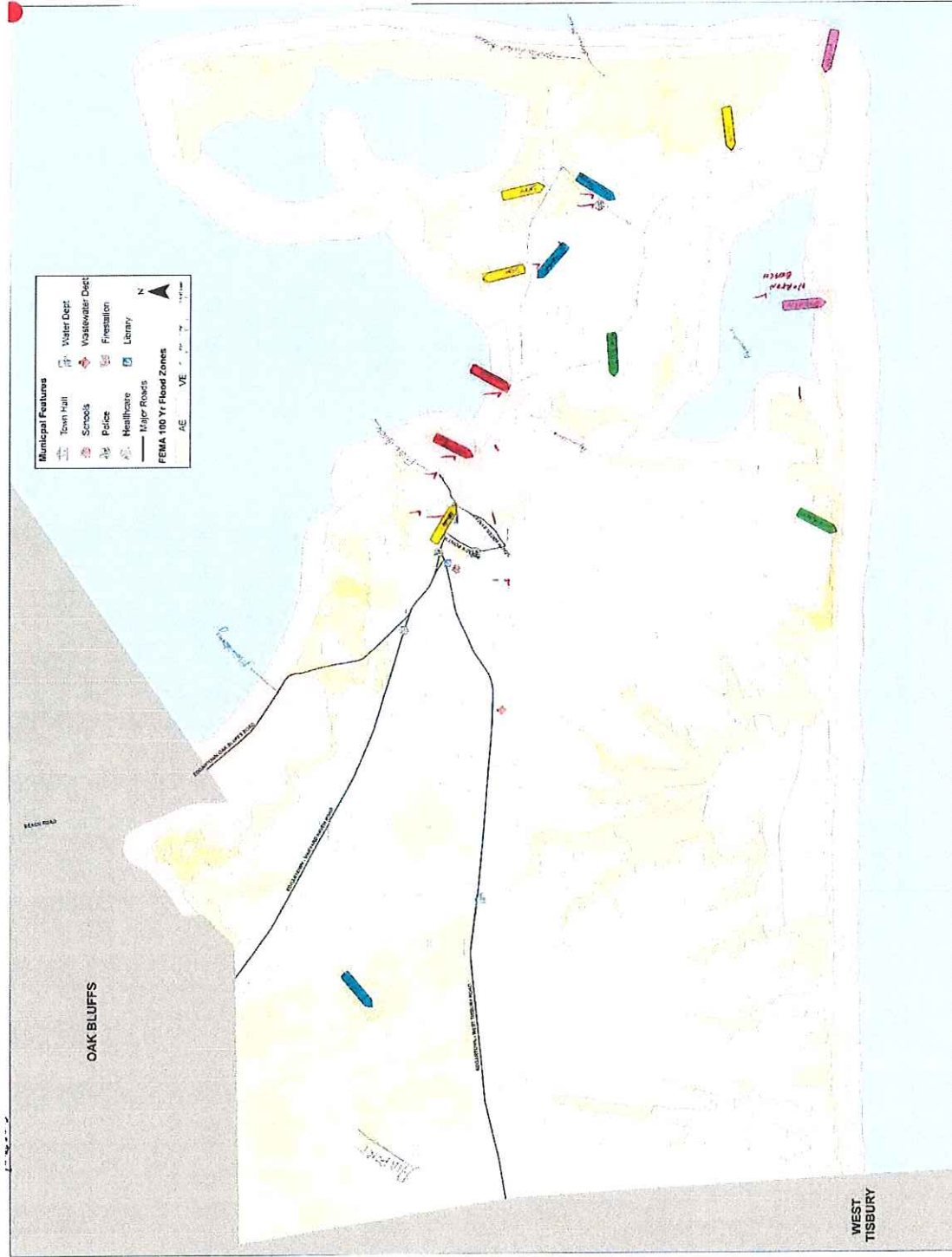


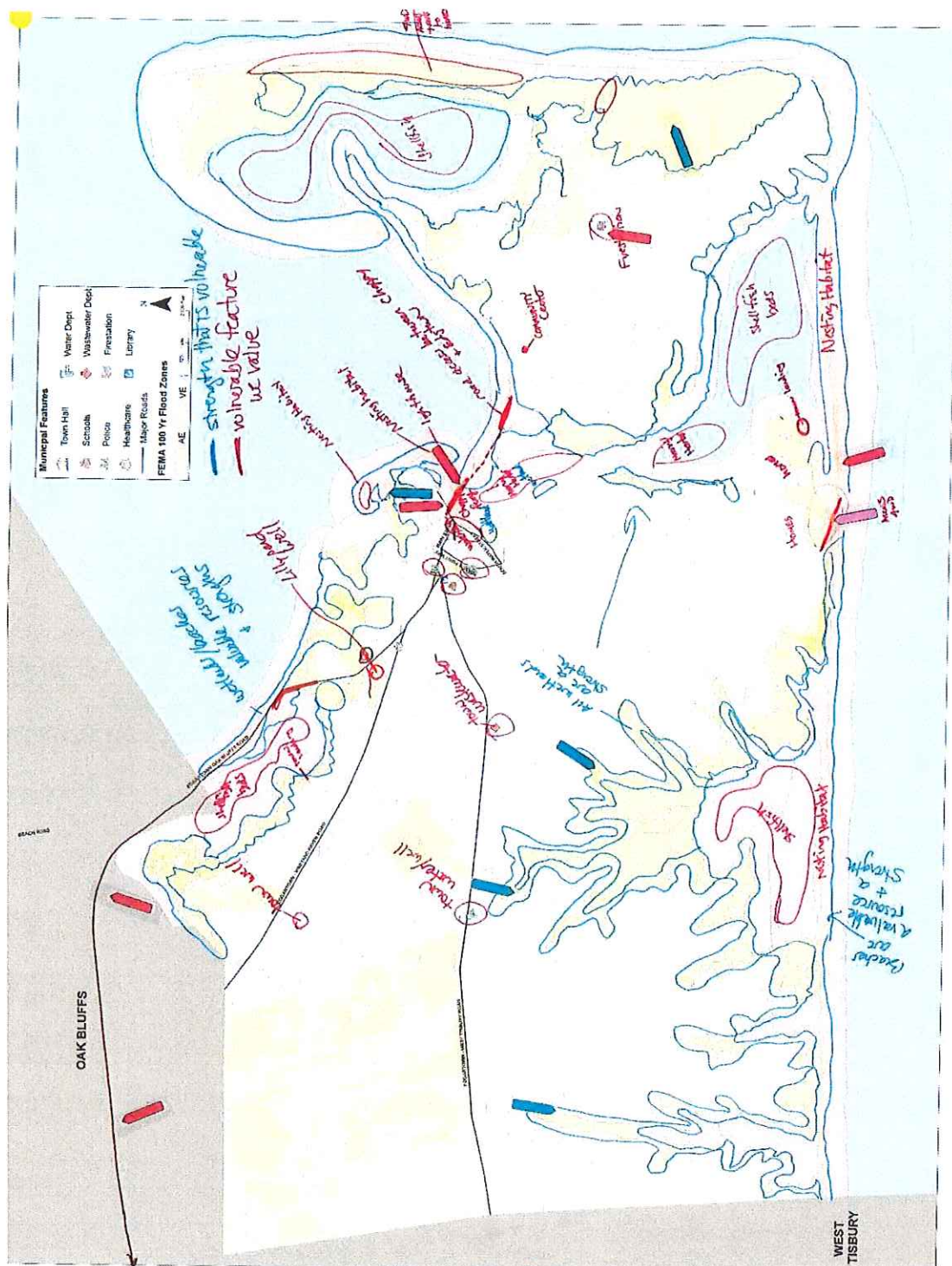
Appendix B: Participatory Mapping Results



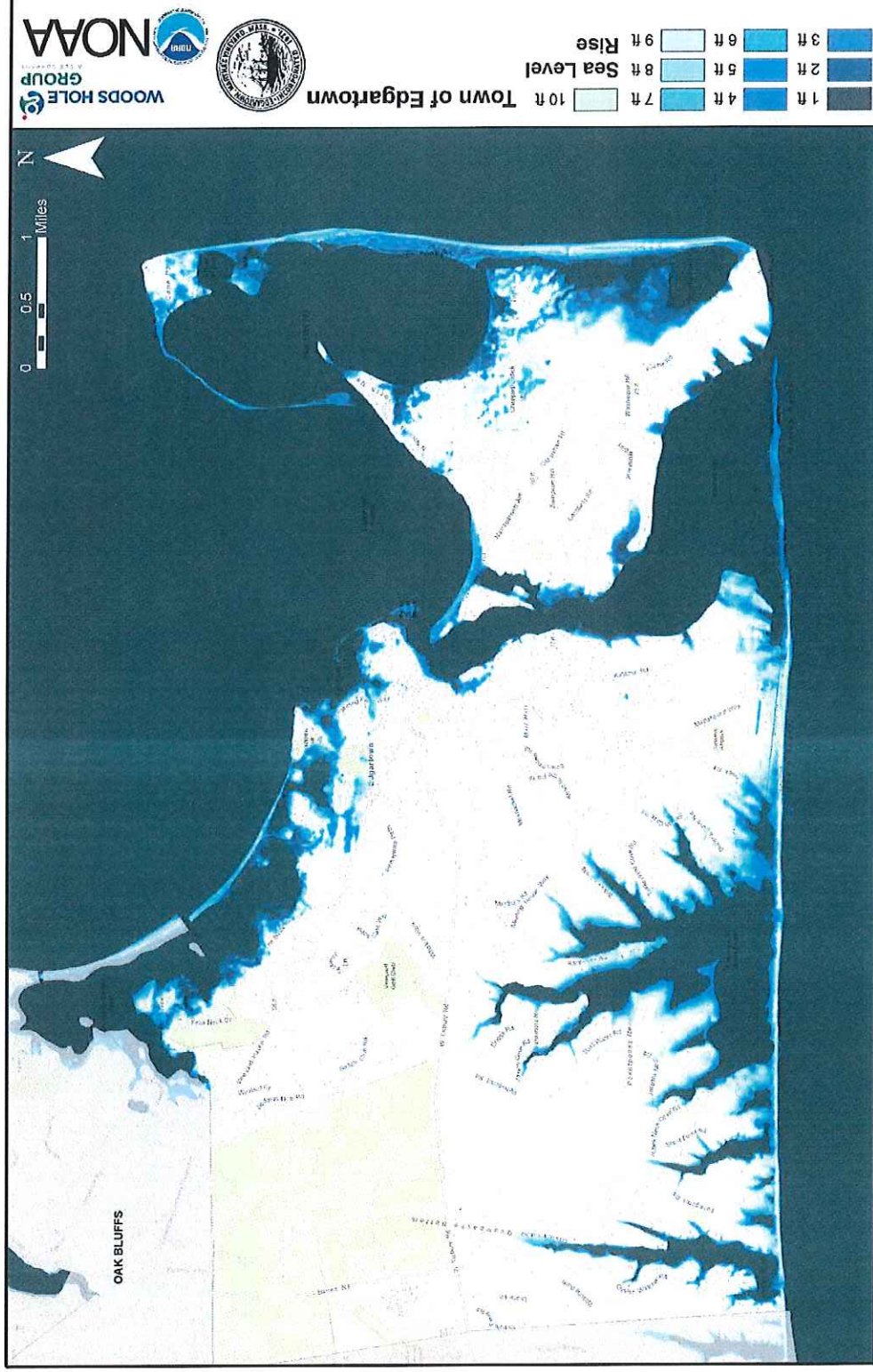


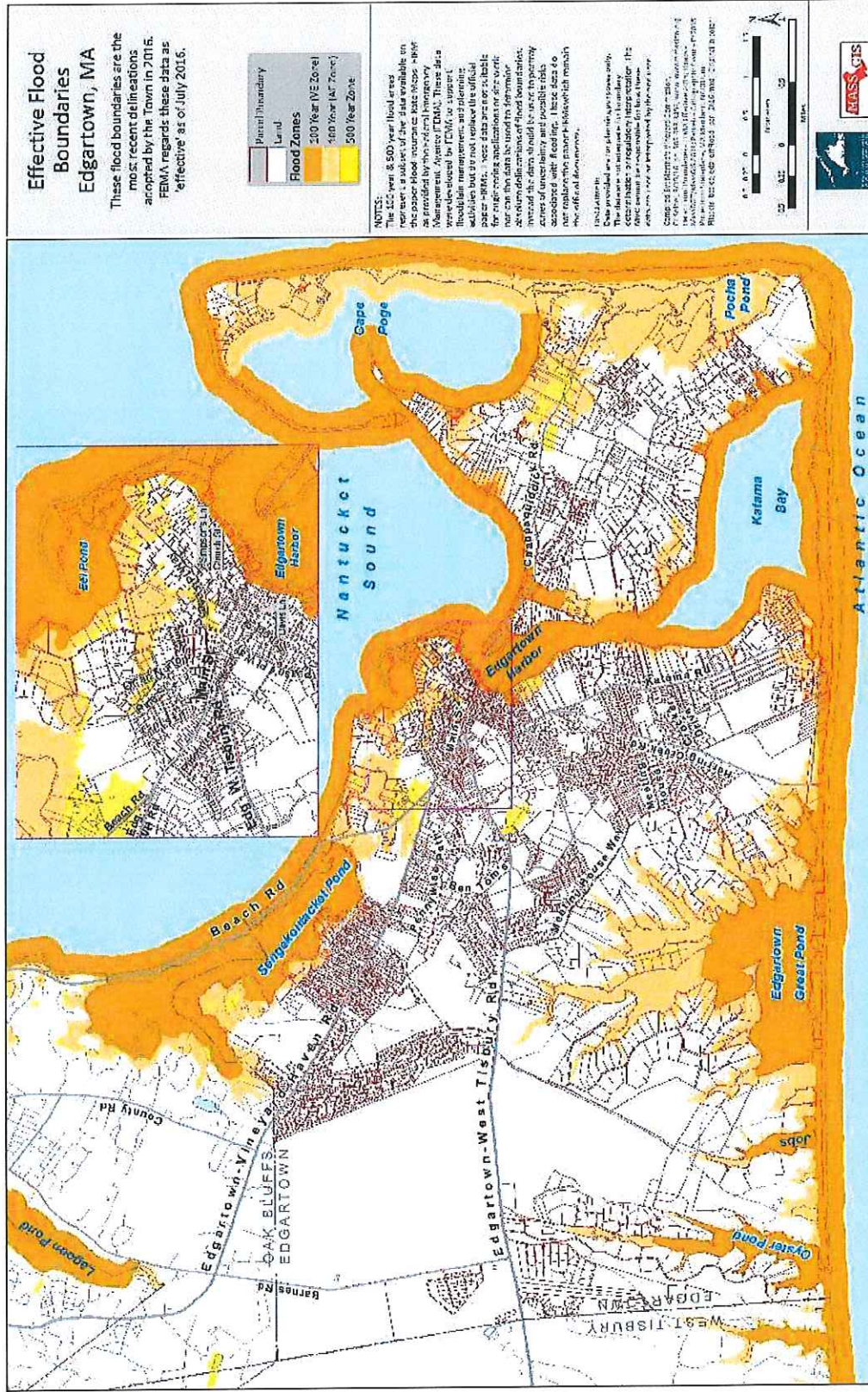


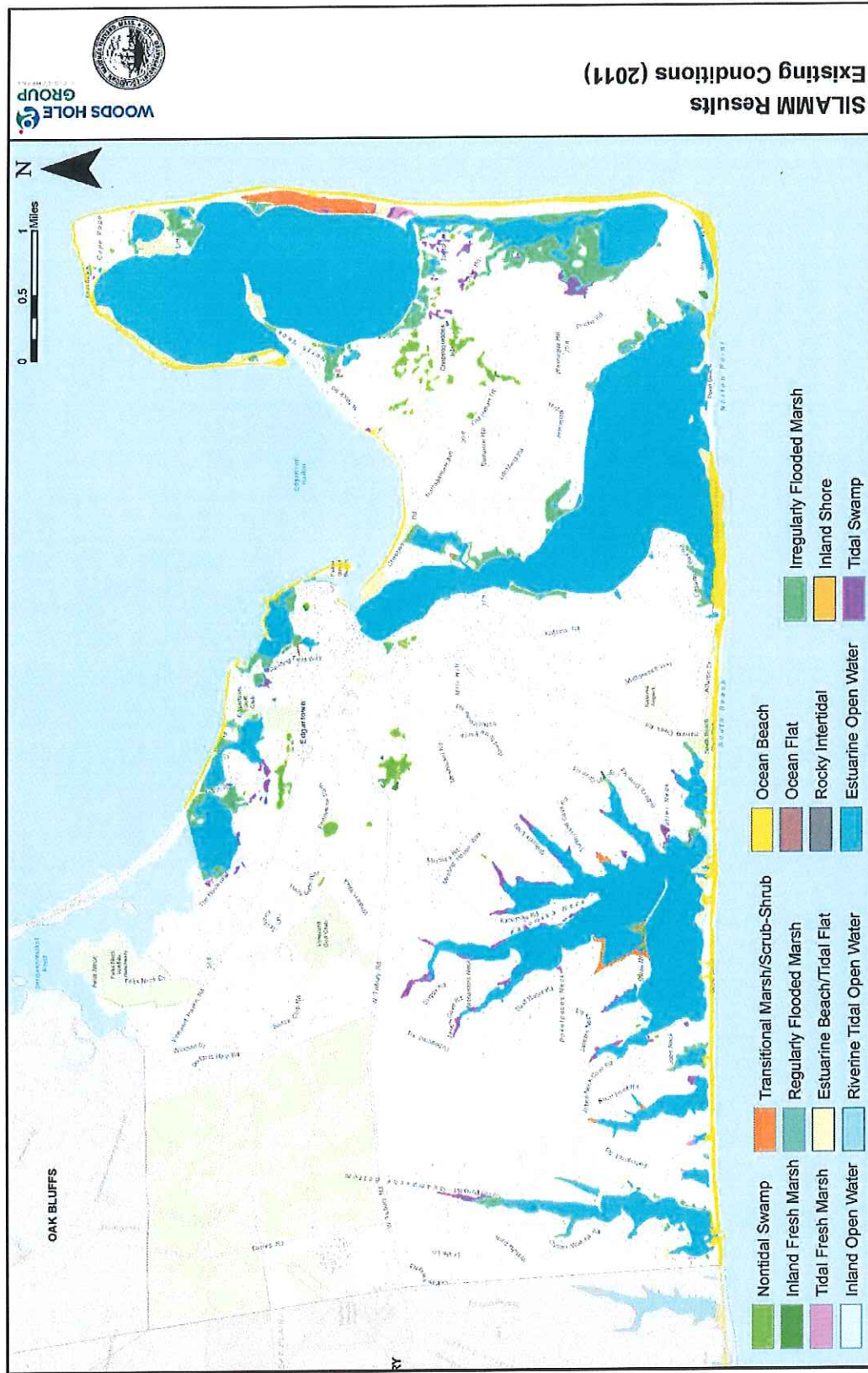


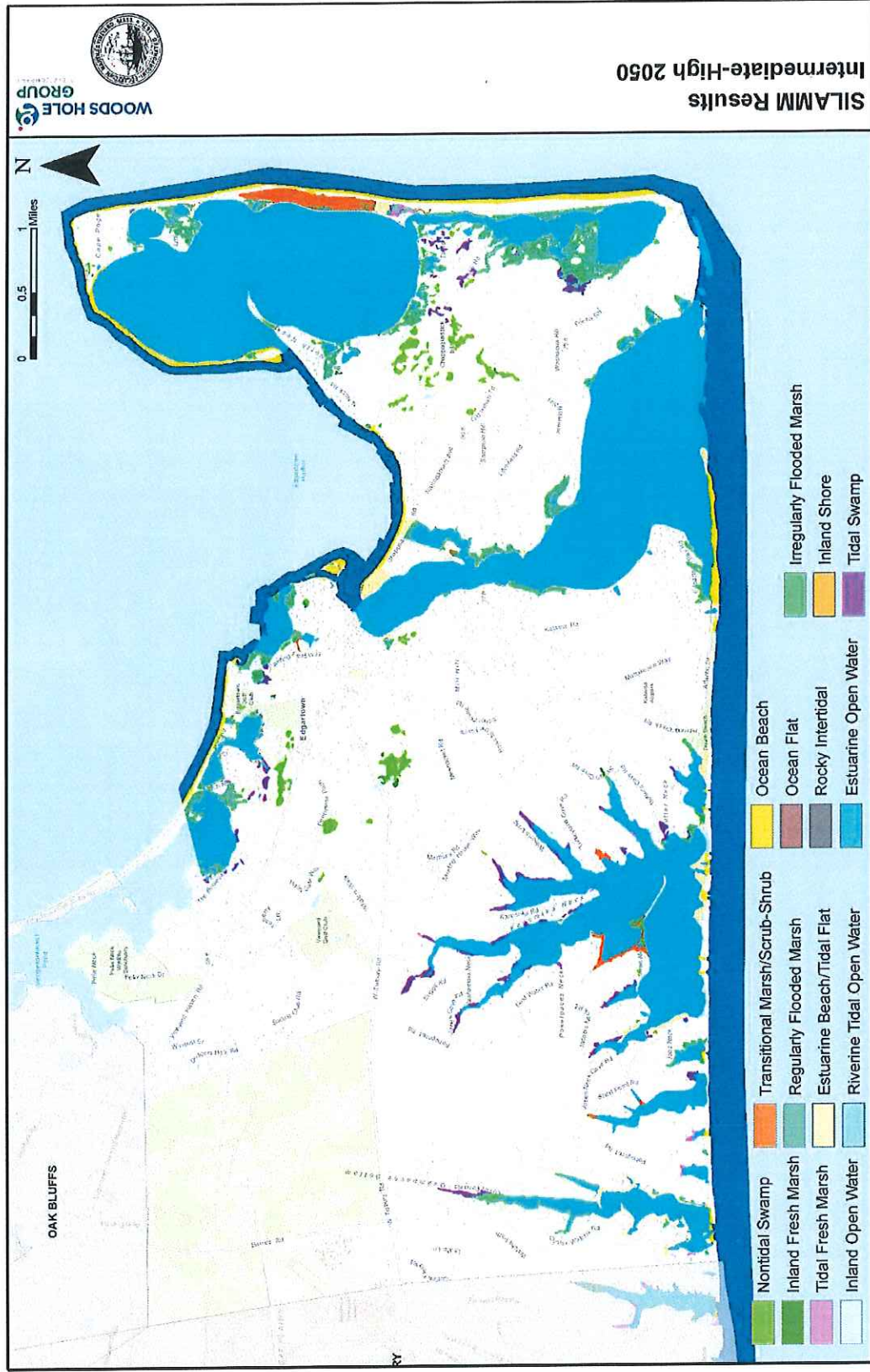


Appendix C: Edgartown Risk Maps Used During Workshop
 (Given as workshop handouts)







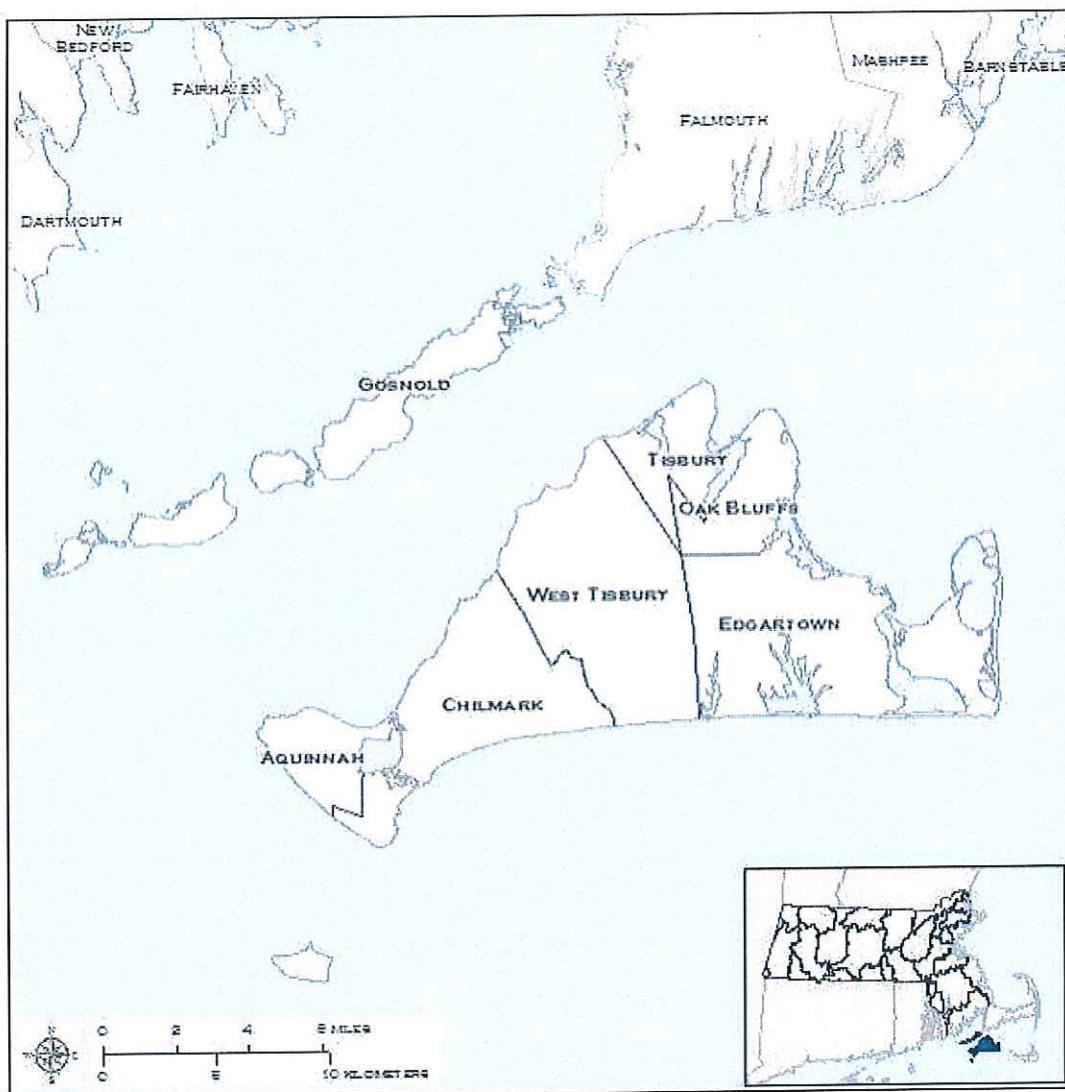


Appendix D: Massachusetts Updated Climate Projections (Given as workshop handouts)

MARTHA'S VINEYARD BASIN

MUNICIPALITIES WITHIN MARTHA'S VINEYARD BASIN:

Aquinnah, Chilmark, Edgartown, Gosnold, Oak Bluffs, Tisbury West Tisbury



Many municipalities fall within more than one basin, so it is advised to use the climate projections for the basin that contains the majority of the land area of the municipality.

MARTHA'S VINEYARD BASIN

Martha's Vineyard Basin		Observed Baseline 1971-2000 (°F)	Projected Change in 2030s (°F)	Mid-Century Projected Change in 2050s (°F)	Projected Change in 2070s (°F)	End of Century Projected Change in 2090s (°F)
Average Temperature	Annual	50.57	+1.78 to +3.34	+2.36 to +5.15	+2.73 to +7.40	+3.03 to +9.05
	Winter	32.43	+1.67 to +3.50	+2.36 to +5.17	+2.71 to +7.14	+3.00 to +8.68
	Spring	46.63	+1.50 to +3.02	+1.93 to +4.88	+2.29 to +6.62	+2.57 to +7.24
	Summer	68.8	+1.77 to +4.04	+2.64 to +5.83	+3.11 to +8.48	+3.63 to +9.86
	Fall	54.13	+1.83 to +3.62	+2.86 to +5.52	+2.75 to +7.94	+3.12 to +9.68
Maximum Temperature	Annual	58.82	+1.68 to +3.38	+2.21 to +5.11	+2.45 to +7.37	+2.77 to +8.91
	Winter	40.56	+1.45 to +3.47	+1.98 to +4.71	+2.40 to +6.84	+2.70 to +8.22
	Spring	54.9	+1.35 to +2.87	+1.72 to +4.61	+2.02 to +6.38	+2.21 to +7.11
	Summer	77.06	+1.66 to +4.02	+2.49 to +5.82	+3.02 to +8.37	+3.41 to +9.58
	Fall	62.48	+1.75 to +3.50	+2.70 to +5.51	+2.69 to +7.73	+2.91 to +9.69
Minimum Temperature	Annual	42.31	+1.89 to +3.41	+2.60 to +5.32	+3.01 to +7.44	+3.30 to +9.14
	Winter	24.3	+1.94 to +3.62	+2.71 to +5.61	+3.12 to +7.76	+3.47 to +9.19
	Spring	38.35	+1.52 to +3.21	+2.24 to +5.16	+2.40 to +6.85	+2.75 to +7.38
	Summer	60.53	+1.92 to +4.06	+2.80 to +5.87	+3.16 to +8.52	+3.84 to +9.96
	Fall	45.78	+1.86 to +3.70	+2.95 to +5.60	+2.81 to +8.08	+3.33 to +9.89

- The Martha's Vineyard basin is expected to experience increased average temperatures throughout the 21st century. Maximum and minimum temperatures are also expected to increase throughout the end of the century. These increased temperature trends are expected for annual and seasonal projections.
- Seasonally, maximum summer and fall temperatures are expected to see the highest projected increase throughout the 21st century.
 - Summer mid-century increase of 2.5 °F to 5.8 °F (3-8% increase); end of century increase of 3.4 °F to 9.6 °F (4-12% increase).
 - Fall mid-century increase of 2.7 °F to 5.5 °F (4-9% increase); end of century increase by and 2.9 °F to 9.7 °F (5-16% increase).
- Seasonally, minimum winter and fall temperatures are expected to see increases throughout the 21st century.
 - Winter mid-century increase of 2.7 °F to 5.6 °F (11-23% increase); end of century increase by 3.5 °F to 9.2 °F (14-38% increase).
 - Fall mid-century of 3 °F to 5.6 °F (6-12% increase); end of century increase of 3.3°F to 9.9°F (7-22% increase).

MARTHA'S VINEYARD BASIN

Martha's Vineyard Basin		Observed Baseline 1971-2000 (Days)	Projected Change in 2030s (Days)	Mid-Century Projected Change in 2050s (Days)	Projected Change in 2070s (Days)	End of Century Projected Change in 2090s (Days)
Days with Maximum Temperature Over 90°F	Annual	0.8	+1.36 to +4.92	+2.49 to +10.00	+3.20 to +20.83	+4.46 to +30.90
	Winter	0.00	+0.00 to +0.00	+0.00 to +0.00	+0.00 to +0.00	+0.00 to +0.00
	Spring	0.01	-0.03 to +0.06	-0.01 to +0.11	-0.01 to +0.14	+0.00 to +0.25
	Summer	0.78	+1.22 to +4.54	+2.41 to +9.61	+3.04 to +19.97	+4.24 to +29.47
	Fall	0.00	+0.03 to +0.25	+0.06 to +0.40	+0.08 to +0.78	+0.12 to +1.55
Days with Maximum Temperature Over 95°F	Annual	0.02	+0.10 to +0.76	+0.33 to +1.67	+0.41 to +4.04	+0.58 to +7.52
	Winter	0.00	+0.00 to +0.00	+0.00 to +0.00	+0.00 to +0.00	+0.00 to +0.00
	Spring	0.00	+0.00 to +0.00	+0.00 to +0.01	+0.00 to +0.04	+0.00 to +0.09
	Summer	0.02	+0.08 to +0.74	+0.33 to +1.64	+0.41 to +3.94	+0.52 to +7.27
	Fall	0.00	+0.00 to +0.03	+0.00 to +0.04	+0.00 to +0.09	+0.00 to +0.23
Days with Maximum Temperature Over 100°F	Annual	0.00	+0.00 to +0.07	+0.00 to +0.21	+0.00 to +0.58	+0.00 to +1.15
	Winter	0.00	+0.00 to +0.00	+0.00 to +0.00	+0.00 to +0.00	+0.00 to +0.00
	Spring	0.00	+0.00 to +0.00	+0.00 to +0.00	+0.00 to +0.00	+0.00 to +0.00
	Summer	0.00	+0.00 to +0.07	+0.00 to +0.20	+0.00 to +0.58	+0.00 to +1.15
	Fall	0.00	+0.00 to +0.00	+0.00 to +0.00	+0.00 to +0.00	+0.00 to +0.01

- Due to projected increases in average and maximum temperatures throughout the end of the century, the Martha's Vineyard basin is also expected to experience an increase in days with daily maximum temperatures over 90 °F, 95 °F, and 100 °F.
 - Annually, the Martha's Vineyard basin is expected to see days with daily maximum temperatures over 90 °F increase by 2 to 10 more days by mid-century, and 4 to 31 more days by the end of the century.
 - Seasonally, summer is expected to see an increase of 2 to 10 more days with daily maximums over 90 °F by mid-century.
 - By end of century, the Martha's Vineyard basin is expected to have 4 to 49 more days.

MARTHA'S VINEYARD BASIN

Martha's Vineyard Basin		Observed Baseline 1971-2000 (Days)	Projected Change in 2030s (Days)	Mid-Century Projected Change in 2050s (Days)	Projected Change in 2070s (Days)	End of Century Projected Change in 2090s (Days)
Days with Minimum Temperature Below 0°F	Annual	0.47	-0.00 to -0.31	-0.06 to -0.32	-0.07 to -0.41	-0.09 to -0.34
	Winter	0.47	-0.00 to -0.31	-0.06 to -0.32	-0.07 to -0.41	-0.09 to -0.34
	Spring	0.00	-0.00 to -0.00	-0.00 to -0.00	-0.00 to -0.00	-0.00 to -0.00
	Summer	0.00	-0.00 to -0.00	-0.00 to -0.00	-0.00 to -0.00	-0.00 to -0.00
	Fall	0.00	-0.00 to -0.00	-0.00 to -0.00	-0.00 to -0.00	-0.00 to -0.00
Days with Minimum Temperature Below 32°F	Annual	104.63	-13.11 to -24.93	-19.34 to -38.71	-21.27 to -50.91	-22.53 to -63.42
	Winter	70.57	-4.39 to -10.57	-6.75 to -17.26	-8.38 to -26.69	-10.00 to -35.51
	Spring	23.91	-4.44 to -10.62	-6.75 to -15.10	-7.58 to -16.90	-9.68 to -18.55
	Summer	0.00	-0.03 to -0.00	-0.03 to -0.00	-0.03 to -0.00	-0.03 to -0.00
	Fall	10.04	-3.41 to -5.39	-4.64 to -7.02	-5.00 to -9.01	-5.33 to -9.98

- Due to projected increases in average and minimum temperatures throughout the end of the century, the Martha's Vineyard basin is expected to experience a decrease in days with daily minimum temperatures below 32 °F and 0 °F.
- Seasonally, winter, spring and fall are expected to see the largest decreases in days with daily minimum temperatures below 32 °F.
 - Winter is expected to have 7 to 17 fewer days by mid-century, and 10 to 36 fewer days by end of century.
 - Spring is expected to have 7 to 15 fewer days by mid-century, and 10 to 19 fewer days by end of century.
 - Fall is expected to have 5 to 7 fewer days by mid-century, and 5 to 10 fewer days by end of century.

MARTHA'S VINEYARD BASIN

Martha’s Vineyard Basin		Observed Baseline 1971-2000 (Degree-Days)	Projected Change in 2030s (Degree-Days)		Mid-Century Projected Change in 2050s (Degree-Days)		Projected Change in 2070s (Degree-Days)		End of Century Projected Change in 2090s (Degree-Days)	
Heating Degree-Days (Base 65°F)	Annual	5772.08	-432.01	to -846.80	-656.35	to -1290.98	-731.25	to -1747.25	-768.72	to -2069.21
	Winter	2950.14	-148.65	to -321.07	-211.22	to -473.25	-244.01	to -642.99	-281.63	to -788.18
	Spring	1695.64	-135.30	to -273.07	-173.73	to -434.52	-204.06	to -576.51	-237.19	to -623.61
	Summer	76.68	-28.16	to -53.78	-42.87	to -66.01	-42.50	to -75.27	-43.66	to -78.81
	Fall	1044.5	-128.19	to -256.36	-214.31	to -378.31	-208.02	to -529.80	-228.58	to -603.72
Cooling Degree-Days (Base 65°F)	Annual	485.77	+170.56	to +398.79	+267.22	to +589.42	+279.55	to +940.78	+362.30	to +1142.37
	Winter	nan	nan	to nan	+2.86	to +2.86	nan	to nan	+3.55	to +3.55
	Spring	7.88	+0.87	to +7.14	+2.20	to +15.87	+2.84	to +28.98	+5.02	to +39.78
	Summer	425.88	+138.07	to +327.08	+197.26	to +475.68	+234.61	to +697.21	+282.09	to +829.21
	Fall	54.11	+26.85	to +73.46	+41.89	to +123.07	+44.77	to +207.10	+63.96	to +279.22
Growing Degree-Days (Base 50°F)	Annual	2553.43	+366.00	to +703.29	+492.53	to +1069.15	+540.11	to +1626.41	+647.88	to +2020.61
	Winter	5.18	-0.86	to +9.47	-0.05	to +16.21	+1.81	to +26.21	+4.41	to +37.58
	Spring	221.69	+39.04	to +97.22	+51.22	to +186.23	+62.27	to +274.92	+64.11	to +314.57
	Summer	1729.23	+162.99	to +371.51	+242.60	to +535.87	+285.38	to +780.31	+333.07	to +906.81
	Fall	597.87	+98.62	to +229.29	+167.80	to +378.91	+162.09	to +556.42	+201.06	to +699.88

- Due to projected increases in average, maximum, and minimum temperatures throughout the end of the century, the Martha's Vineyard basin is expected to experience a decrease in heating degree-days, and increases in both cooling degree-days and growing degree-days.
- Seasonally, winter historically exhibits the highest number of heating degree-days and is expected to see the largest decrease of any season, but spring and fall are also expected to see significant change.
 - The winter season is expected to see a decrease of 7-16% (211 -473 degree-days) by mid-century, and a decrease of 10-27% (282 -788 degree-days) by the end of century.
 - The spring season is expected to decrease in heating degree-days by 10-26% (174 -435 degree-days) by mid-century, and by 14-37% (237 -624 degree-days) by the end of century.
 - The fall season is expected to decreases in heating degree-days by 21-36% (214-378 degree-days) by mid-century, and by 22-58% (229 -604 degree-days) by the end of century.
- Conversely, due to projected increasing temperatures, summer cooling degree-days are expected to increase by 46-112% (197 -476 degree-days) by mid-century, and by 66-195% (282 - 829 degree-days) by end of century.

- Seasonally, summer historically exhibits the highest number of growing degree-days and is expected to see the largest decrease of any season, but the shoulder seasons of spring and fall are also expected to see an increase in growing degree-days.
 - The summer season is projected to increase by 14-31% (243 -536 degree-days) by mid-century, and by 19-52% (333 -907 degree-days) by end of century.
 - Spring is expected to see an increase by 23-84% (51 -186 degree-days) by mid-century and 29-142% (64 -315 degree-days) by end of century.
 - Fall is expected to see an increase by 28-63% (168 -379 degree-days) by mid-century and 34-117% (201 -700 degree-days) by end of century.

MARTHA'S VINEYARD BASIN

Martha's Vineyard Basin		Observed Baseline 1971-2000 (Days)	Projected Change in 2030s (Days)	Mid-Century Projected Change in 2050s (Days)	Projected Change in 2070s (Days)	End of Century Projected Change in 2090s (Days)
Days with Precipitation Over 1"	Annual	6.65	+0.31 to +1.75	+0.55 to +2.90	+0.50 to +3.12	+0.78 to +3.36
	Winter	1.22	-0.13 to +0.55	-0.05 to +0.62	-0.02 to +0.99	-0.04 to +1.18
	Spring	1.72	+0.22 to +0.61	+0.12 to +0.93	+0.34 to +1.04	+0.36 to +1.06
	Summer	1.82	-0.32 to +0.58	-0.04 to +0.76	-0.26 to +0.68	-0.41 to +0.68
	Fall	1.89	-0.26 to +0.75	-0.14 to +0.99	-0.17 to +0.86	-0.19 to +1.27
Days with Precipitation Over 2"	Annual	0.52	-0.01 to +0.37	+0.03 to +0.34	+0.05 to +0.45	+0.07 to +0.57
	Winter	0.08	-0.06 to +0.13	-0.05 to +0.14	-0.03 to +0.14	-0.02 to +0.24
	Spring	0.03	-0.01 to +0.10	-0.01 to +0.13	+0.00 to +0.12	-0.01 to +0.17
	Summer	0.25	-0.04 to +0.09	-0.01 to +0.12	-0.01 to +0.11	-0.02 to +0.17
	Fall	0.16	-0.03 to +0.14	-0.02 to +0.13	-0.01 to +0.16	-0.03 to +0.27
Days with Precipitation Over 4"	Annual	0.03	+0.00 to +0.02	-0.03 to +0.04	-0.03 to +0.06	-0.03 to +0.08
	Winter	0.00	+0.00 to +0.00	+0.00 to +0.00	+0.00 to +0.00	+0.00 to +0.00
	Spring	0.00	+0.00 to +0.00	+0.00 to +0.00	+0.00 to +0.00	+0.00 to +0.00
	Summer	0.00	+0.00 to +0.02	+0.00 to +0.03	+0.00 to +0.02	+0.00 to +0.03
	Fall	0.03	-0.03 to +0.01	-0.03 to +0.03	-0.03 to +0.03	-0.03 to +0.07

- The projections for expected number of days receiving precipitation over one inch are variable for the Martha's Vineyard basin, fluctuating between loss and gain of days.
 - Seasonally, the winter season is generally expected to see the highest projected increase.
 - The winter season is expected to see an increase in days with precipitation over one inch of 0-1 days by mid-century, and of 0-1 days by the end of century.
 - The spring season is expected to see an increase in days with precipitation over one inch of 0-1 days by mid-century, and of 0-1 days by the end of century.

MARTHA'S VINEYARD BASIN

Martha's Vineyard Basin		Observed Baseline 1971-2000 (Inches)	Projected Change in 2030s (Inches)	Mid-Century Projected Change in 2050s (Inches)	Projected Change in 2070s (Inches)	End of Century Projected Change in 2090s (Inches)
Total Precipitation	Annual	46.02	-1.04 to 2.45	-1.01 to +3.78	-0.91 to +5.09	-0.69 to +4.87
	Winter	11.85	-0.47 to +1.30	-0.42 to +1.61	-0.18 to +2.04	-0.16 to +2.84
	Spring	12.12	-0.22 to +1.51	-0.51 to +1.76	+0.10 to +2.00	-0.19 to +2.16
	Summer	10.38	-0.81 to +0.88	-1.06 to +1.53	-1.53 to +1.64	-1.86 to +1.57
	Fall	11.71	-1.00 to +0.67	-1.15 to +0.91	-1.03 to +1.38	-1.91 to +1.21

- Similar to projections for number of days receiving precipitation over a specified threshold, seasonal projections for total precipitation are also variable for the Martha's Vineyard basin.
 - The winter season is expected to experience the greatest change with a decrease of 4% to an increase of 14% by mid-century, and a decrease of 1% to an increase of 24% by end of century.
 - Projections for the summer and fall seasons are more variable, and could see either a drop or increase in total precipitation throughout the 21st century.
 - The summer season projections for the Martha's Vineyard or basin could see a decrease of 1.1 to an increase of 1.5 inches by mid-century (decrease of 10% to increase of 15%) and a decrease of 1.9 to an increase of 1.6 inches by the end of the century (decrease of 18% to increase of 15%).
 - The fall season projections for the Martha's Vineyard basin could see a decrease of 1.2 to an increase of 0.9 inches by mid-century (decrease of 10% to increase of 8%) and a decrease of 1.9 to an increase of 1.2 inches by the end of the century (decrease of 16% to increase of 10%).

MARTHA'S VINEYARD BASIN

Martha's Vineyard Basin		Observed Baseline 1971-2000 (Days)	Projected Change in 2030s (Days)	Mid-Century Projected Change in 2050s (Days)	Projected Change in 2070s (Days)	End of Century Projected Change in 2090s (Days)
Consecutive Dry Days	Annual	17.68	-0.89 to +1.72	-0.25 to +2.39	+0.00 to +3.05	-0.54 to +3.87
	Winter	10.41	-0.50 to +1.30	-0.36 to +1.62	-0.47 to +1.80	-0.62 to +1.99
	Spring	10.26	-1.11 to +0.95	-0.90 to +1.13	-0.76 to +0.85	-1.62 to +1.16
	Summer	14.65	-0.87 to +1.93	-0.59 to +2.39	-0.63 to +3.13	-0.47 to +4.18
	Fall	13.1	-0.42 to +2.05	+0.08 to +2.40	-0.20 to +3.32	-0.11 to +3.29

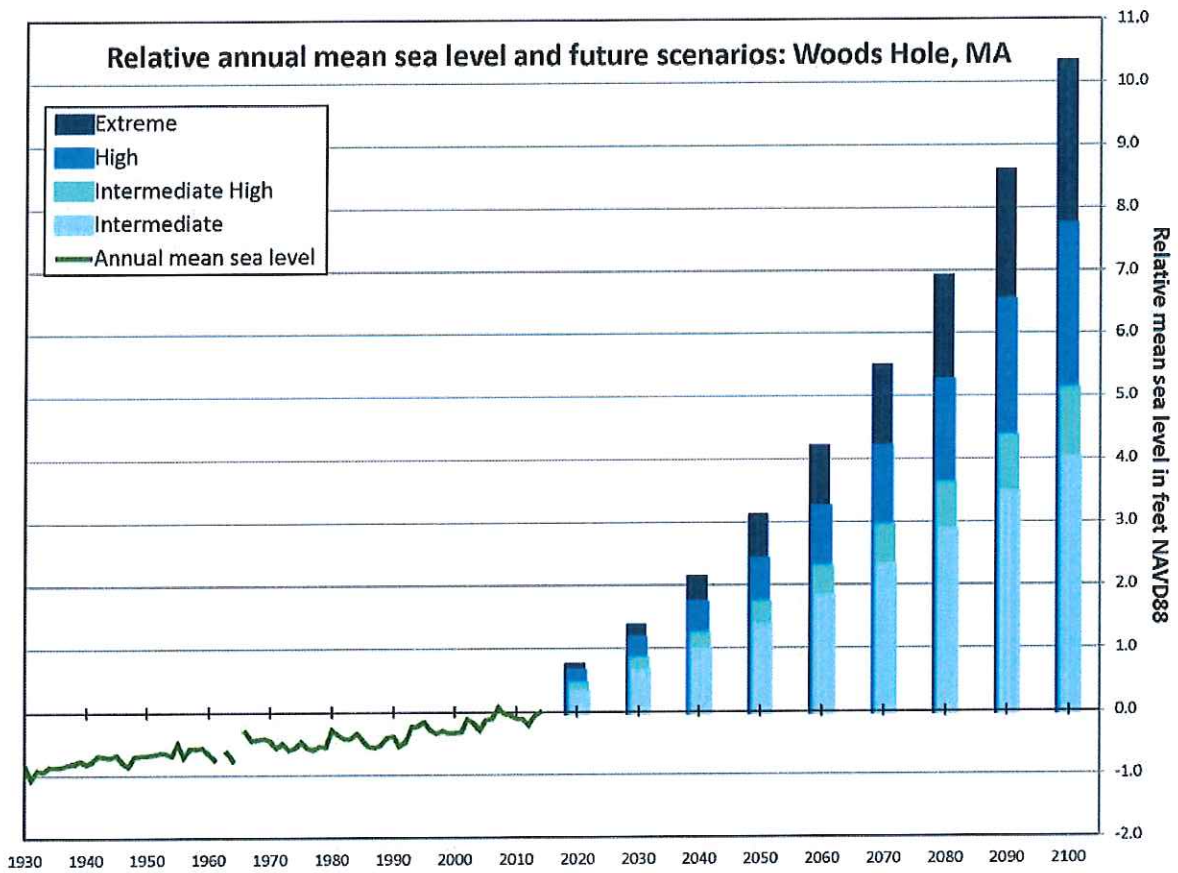
- Annual and seasonal projections for consecutive dry days, or for a given period, the largest number of consecutive days with precipitation less than 1 mm (~0.04 inches), are variable throughout the 21st century.

- For all the temporal parameters, the Martha's Vineyard basin is expected to see a slight decrease to an increase in consecutive dry days throughout this century.
- Seasonally, the fall and summer seasons are expected to continue to experience the highest number of consecutive dry days.

The summer season is expected to experience an increase of 0-4 days in consecutive dry days by the end of the century.

Future Conditions: Sea Level Rise

Relative mean sea level (feet NAVD88) for Woods Hole, MA					
Scenario	Cross-walked probabilistic projections	2030	2050	2070	2100
Intermediate	Unlikely to exceed (83%) under RCP8.5	0.6	1.3	2.3	4.0
	<ul style="list-style-type: none"> Extremely unlikely to exceed (95%) under RCP4.5 Unlikely to exceed (83%) under RCP4.5 About as likely as not to exceed (50%) under RCP4.5 when accounting for possible ice sheet instabilities 				
Intermediate - High	Extremely unlikely to exceed (95%) under RCP8.5	0.8	1.7	2.9	5.1
	<ul style="list-style-type: none"> Unlikely to exceed (83%) under RCP4.5 when accounting for possible ice sheet instabilities About as likely as not to exceed (50%) under RCP8.5 when accounting for possible ice sheet instabilities 				
High	Extremely unlikely to exceed (99.5%) under RCP8.5	1.1	2.4	4.2	7.7
	<ul style="list-style-type: none"> Unlikely to exceed (83%) under RCP8.5 when accounting for possible ice sheet instabilities Extremely unlikely to exceed (95%) under RCP4.5 when accounting for possible ice sheet instabilities 				
Extreme (Maximum physically plausible)	Exceptionally unlikely to exceed (99.9%) under RCP8.5	1.3	3.1	5.4	10.3
	<ul style="list-style-type: none"> Extremely unlikely to exceed (95%) under RCP8.5 when accounting for possible ice sheet instabilities 				



Appendix E: Listening Session Public Comments



Town of Edgartown
Municipal Vulnerability Preparedness Program
Community Public Listening Session
Fred B. Morgan, Jr. Meeting Room
Town Hall
70 Main St.
Thursday March 28, 2019
2-3:30 p.m.

Agenda

2:00-2:05 Introduction to Public Listening Session

2:05-2:30 Poster session

- Interact with Town basemap and completed matrices

2:30-3:15 Formal Presentation of MVP Workshop Results

- Given by Jane Varkonda, Conservation Agent

3:15-3:30 Public Comment Session

- Submit any comments
- Minutes documented by Woods Hole Group Staff

Edgartown MVP Listening Session (March 28, 2019) Public Comments:

The Edgartown MVP Public Listening Session was scheduled as a stand along meeting located at Town Hall of Edgartown. See attached meeting agenda). The following public comments were generated during the Listening Session:

- Regarding a Beach Management Plan from the top priority actions list, we need to encourage cooperation between the town and the Trustees of Reservation in terms of closing the Norton Point beach when there are nesting birds. Is there some way to create solutions to maintain beach access but still protect the birds? The closing of beaches effects business (i.e. upwards of 20% loss in businesses that rely on beach traffic). One possible solution is to add on a small fee on each visitor pass that will pay salary for someone to monitor beach habitat.
- Once participant was concerned about the top priority actions have the word plan, study, document since there is not legal holding to these actions. Why not directly taking action? Suggests using words like proposal, hire, seek input.
- In one particular workshop group there was heavy representation from Chappy residents and there is some concern that the importance of the Chappy Ferry relocation feasibility study was heavily biased when the number of residents it effects is only a small percentage of the entire Edgartown population.
- Expressed concern about the pump station next to the Atlantic Restaurant. This particular pump station can affect the entire town if it backs up or malfunctions. This commenter expressed concerns that if it backs up it could flood basements. They mentioned this has already happened several times to the Atlantic Restaurant (e.g. July 3rd 2018) where flooding the basement occurred and caused \$750,000-\$1,000,000 in damaged to infrastructure and inventory.
 - o Another participant mentioned that the sewage treatment plant personnel are aware of these issues but didn't offer any more information regarding what is going to happen to resolve it. There are also issues concerning salt water intrusion through this system.
- Another participant expressed concern regarding the Chappy Shellfish nursery located on the Chappy Point Beach property owned by the Martha's Vineyard Land Bank Commission. The participants were concerned about the continual use of the beach house as a nursery by the Martha's Vineyard Shellfish Group because the property could be susceptible to climate change and Sea Level Rise. The Shellfish Group also is concerned because they do not own the land or building, instead lease it from the Land Bank. This area has been affected by previous hazards and worry about the maintenance of the property if future hazards occur.
- Is there a way to get these actions to a higher invested party (Feds/State) RE: the island emergency plan? Fuel supply to the island/Edgartown may be an issue that Edgartown, as a town, may not really have a lot of capabilities of solving or working on. So how can the town secure fuel supply in the event of a hazard.

- One person mentioned that it's the longer-term storms like the 2018 Nor'easters that put the town at the greatest risk. Fuel is especially important because if power is down then pump stations stop.
- Could we discuss the armoring of beaches to control erosion and beach replenishment? *Jane Varkonda and Woods Hole Group suggested that this be a big topic in the beach management plan if the town were to pursue an action grant for that top priority.*
- Re: Beach nourishment- is there a ban on these efforts? Need to bring attention to the federal navigation channel to the Federal government.
- North Shore is more stable than the south side. There has been a loss of dunes from past storms.
- Re: Edgartown Great Pond- This participant was concern about the pond of Great Pond on the south shore of Edgartown. They believe that the water level needs to rise in order to breach and connect to the ocean.
- Don't forget about the Highway Department and Animal control on meetinghouse way. The pound could be used for small animals in the event of a hazard or emergency. The highway Dept keeps the roads open and usable.

Other Public Comments Emailed to Jane Varkonda

On 3/18/2019 11:03 AM, David Thompson wrote:

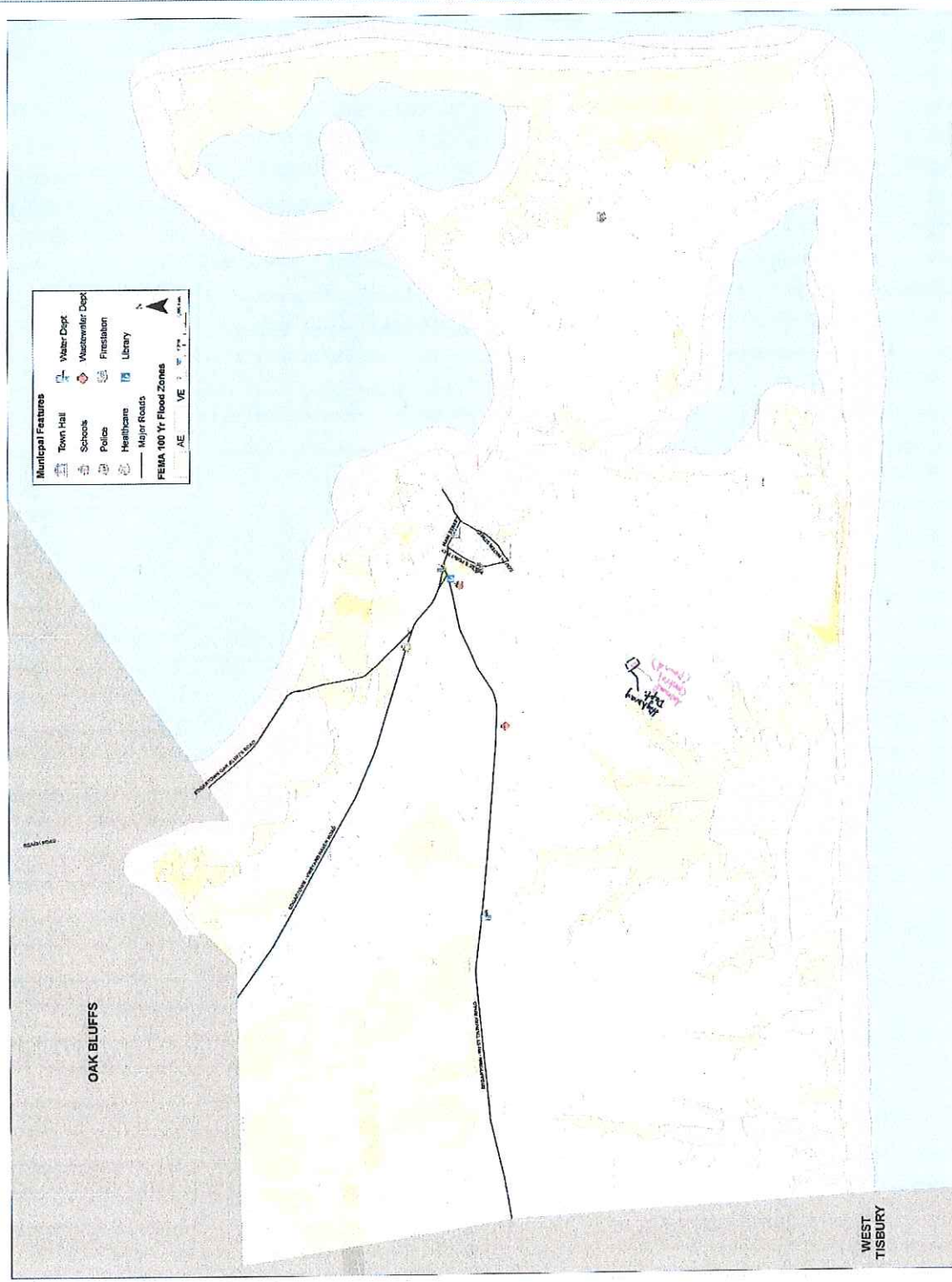
Dear Jane,

On reading through, in item #9 it refers to a Dock St. hazard assessment and upgrade. See attached. This upgrade was completed in April of 2017.

Another pump station that has vulnerability is at Dunham Rd and S. Water. This should be added to the infrastructure list. It is listed in the Dukes County Hazard Plan already. Unfortunately, because of the relatively few residents it serves, it is highly unlikely to be eligible for the Hazard Mitigation Grant Program that got the Dock St. and School/emergency Shelter generator HMGP grants. It is, however on the Capital Improvement Plan upgrade list, and is presently in design phase. We hope to incorporate some resiliency elements into the upgraded design, but face aesthetic challenges in armoring up the aboveground elements of a new design located in this historic neighborhood. DT

-- Thank you

David Thompson, Edgartown WWTF
330 West Tisbury Rd.
PO Box 1068
Edgartown MA 02539



Participants of the listening session were able to mark up a separate Edgartown base map identifying important town features.

Town of Edgartown Final Risk Matrix						
Top Priority Hazards						
A. Coastal Flooding, B. Sea Level Rise, C. Hurricanes & Tropical Storms, D. Nor'easters/Snow Storms						
Features	Ownership	V or S	Team Color	Action Items	Hazards Addressed	Priority H-M-L Time S-L-O
Infrastructure						
Airport #1	Town	S	Green			
Airport	Town		Red			
Animal Control	Town		Yellow			
Airport #2	Town	V/S	Green			
Atlantic Drive Flooding	Town	V	Blue			
Atlantic Drive	Town	V	Yellow			
Atlantic Drive Flooding	Town	V	Orange	Comprehensive coastal road vulnerability assessment and retreat plan.	A,B,C,D	High Shore
Beach Rd	State	V	Blue			
Beach Rd	State	V	Yellow			
Beach Rd	State	V	Orange			
Big Bridge (Little)	State	V	Green			
Bike Path/Beach Rd	State	V	Green			
Bend in the Road/State Beach Rd	Town	V	Blue			
Buildings on Dock Street	Private	V	Red			
Cell Communication	Private	V/S	Red	Advisory group/committee to examine cellular deficiencies and identify gaps in coverage and assessment of suitable sites for network expansion.	C,D	Low Short
Chappy Community Center	Private	S	Red			
Chappy Ferry	Private	V	Blue	Ferry accessibility - Feasibility study to determine risks from flooding/storms on the ferry and surrounding area and potential solutions.	A,B,C,D	High Long
Chappy Ferry	Private	V/S	Green	Identify and prioritize low-lying transportation infrastructure. Feasibility study for re-engineering or re-location.	A,B,C,D	High/Medium Long
Chappy Ferry	Town	V/S	Orange	Feasibility study for re-build/relocation	A,B,C,D	High Short
Chappy Ferry/Access	Town	V	Yellow	Set aside money for re-building ferry area. Raise the ramp system and roads, including Chappy and Daggett Rd.		High Long
Chappy Ferry/Landing Ramps	Town/Private	V/S	Red	Advisory group/committee to study solutions/alternatives for Chappy Ferry/ramps/landings to resiliency and sustainability.	A,B,C,D	High Ongoing
Chappy Fire Station	Town	S	Red			
Chappy Fire Station - Community Center	State		Yellow	Advisory group/committee to study solutions/alternatives for Caleb Pond Rd/Chappy Rd/Daggett St/Dock St to resiliency and sustainability.		
Chappy Road	Town	V	Red		A,B,C,D	High Ongoing
Collins Beach	State	V/S	Blue			
Culverts - BTR/Senge, Planting Field Way, Edgartown/West Tis. Rd	Town	V	Blue			
Dike Bridge	Town	V	Yellow			
Dock Street	Town	V	Green	Coastal vulnerability study. Identify and assess options to respond to sea-level rise and coastal flooding.	A,B,C,D	High Long/Ongoing
Dock Street Sewer Main	Town	V	Yellow			
Dock Street Sewer Mains	Town	V	Red			
Dock Street Sewer Pumping Station	Town	V	Blue			
Dock Street Sewer Pumping Station	Town	V	Orange	Assessment of possible upgrade/retrofit.		
Downtown Flooding	Town	V	Blue		A,B,C,D	High Short
Edgartown Elementary Center	Town	S	Red	Identify opportunities to increase expansion, including purchasing additional beds and supplies.	C,D	Medium Short
Electric Infrastructure - Poles	Town/Private	V	Yellow			
Emergency Communication	Town/Private	V/S	Red			
Entrance Norton Pt	County/Private	V/S	Yellow			
Fire Station #1	Town	V/S	Green			
Fire Station #2 - Chappy	Town	S	Green			
Fire Station (Mainland)	Town	S	Red			
Food Market	Private	V/S	Orange			
Fuel	Private	V/S	Orange			
Fuller St Beach (Protects Harbor Properties)	Town	V	Blue			
Harbor	Town	V	Orange			
Harbor Entrance	Federal	V	Blue	Engineering feasibility for piers to protect the channel. New bathy survey to determine dredging feasibility for navigation.	A,B,C,D	High Long/Ongoing
Katama Airport	Town	V	Yellow			
Katama Airstrip	Town	S	Orange			
Katama Boat Ramp	State	V/S	Yellow			
Katama Farm	Private	V/S	Orange			
Katama Rd	Town	V	Yellow			
Lighthouses	Federal	V	Green			
Lower Main Street	Town	V	Blue			
Main Airport	Town	S	Orange			
Mataketset Way	Town	V	Yellow			
Memorial Wharf/North Wharf	Town	V	Blue			
Millhill Water Tank	Town	V/S	Orange			
Moorings/Harbor Facilities	Town	V/S	Yellow	Maintain the harbor master facilities and increase resilience, communication, and emergency response abilities.		High
North Wharf Gas Dock	Town/Private	V/S	Red			
Norton Point	Town	V/S	Yellow	Create plan to maintain access.		Medium Short
Police Station	Town	V/S	Green			

Police Station (Mainland)	Town	S	Red				
Police/Fire Station	Town	S	Orange				
Public Wharf	Town	V	Green				
Residential Homes	Private	V	Green				
Residential Internet	Town	V	Red				
School	Town	S	Green				
School/Library	Town	S	Orange				
Senior Center	Town	V/S	Green				
Septic Systems	Private	V	Yellow				
Sewer Pump Station - Wharf	Town	V	Green				
Smith Hollow - Lilly Pond - Town Wells	Town	V	Yellow				
South Beach (Katana Bay)	Town	V	Blue				
Storm Drains	Town	V	Blue				
Telecommunications	Private	V	Orange			A,B,C,D	Medium/Low Ongoing
The 'Gut'	Town	V	Orange				
Town Barn	Town	V	Red				
Town Hall	Town	V/S	Green				
Town Landing	Town	V	Orange				
Town Landings/Ramps	Town/Private	V/S	Red				
Town Wastewater (expansion)	Town/State	V/S	Yellow				High
Town Wells	Town	V/S	Green				
Transfer Station	Town	S	Green				
Utilities	All	V/S	Blue				
Utilities	Town	S	Orange			C,D	Medium/Low Ongoing
Vineyard Haven Road	Town	S	Blue			A,B,C,D	Medium Ongoing
VTA	Private	S	Blue				
Water Distribution	Town	S	Orange				
Water tower/wells	Town	V/S	Red				
West Tis Road	Town	S	Blue				
Environmental							
Aquaculture	Private	V	Green				
Aquaculture Leases	Town/Private	V	Red				
Barrier Beaches	All	V/S	Orange			A,B,C,D	High
Barrier Beaches	Private	V/S	Yellow				
Beach Vegetation	All	S	Yellow				
Beaches	All	V/S	Red				
Beaches - Beach Club Beach	Private	V	Red				
Beaches - Bend in the Road Beach	Private	V	Blue				
Beaches - Bend in the Road Beach	Town	V/S	Green				
Beaches - East Beach	Private	V/S	Green				
Beaches - East Beach	Town/State	V	Red			A,B,C,D	Medium/Low Long/Ongoing
Beaches - Fuller St Beach	Town	V	Blue				
Beaches - Fuller St Beach	Town	V	Red				
Beaches - Little Beach	Private	V/S	Blue				
Beaches - Little Beach	Private	V/S	Green				
Beaches - Norton Beach	Town/State	V	Red				
Beaches - South Beach	State	V/S	Green			A,B,C,D	High
Beaches - South Beach	Town	V	Red				
Beaches - State Beach	State	V/S	Green				
Beaches - State Beach	State	V	Red				
Beaches/Tourism	Private	Blue	Blue				
Cape Page Elbow	Town	Blue	Blue				
Chappy Rd	Town	Red	Red				
Conservation Lands	Town/State/Private	S	Green				
Conservation Lands	Town/Private	V	Orange				
Dunes	All	S	Yellow				
Edgartown School			Red				
Eel Pond Shoaling			Blue				
Fuller St/Lighthouse Beach	Town	V/S	Green				
Great Pond	State	V/S	Green				
Great Pond	Town/State/Private	V/S	Yellow				
Nesting Habitat	County/Town/Private	V	Yellow				Long
Nesting Shorebird Habitat	State/Federal	V	Orange				
New Town Aquifers	Town/Private	V/S	Red			A,B,C,D	High
Open Space			Orange			A,B,C,D	Medium
Plovers/Terns			Blue				Ongoing
Potential Oil Spills	All	V	Orange				
Salt Marsh along Beach Rd			Blue				

Salt Marsh Resources	Town/State	V/S	Red	Examine impacts of spring 2018 weather to existing living shoreline. Implement repairs and/or reconstruction of infrastructure in project site.	A,B,C,D	High	Ongoing
Salt Marsh Resources	Town/Private	V/S	Green				
Salt Marshes	All	V/S	Yellow				
Salt Marshes - Chappy	Private	V	Orange				
Saltmarsh - Felix Neck	Town	V	Orange				
Sedimentation/Dredging							
Sengekontacket Shellfish Beds							
Sengekontacket	State	V/S	Orange	Study to evaluate recreational shellfish resources in town. Predator control and shellfish seeding for recreational use. Funds from MV shellfish group.	B	Medium	Long
Shellfish - Katama			Blue				
Shellfish beds	Town/State	V/S	Yellow				
Shellfish Habitat	Town/State	V/S	Orange				
Shellfish Hatchery	Private	V/S	Green				
Shellfish Hatchery	Private		Orange	Support shellfish propagation programs and identify other suitable locations for hatcheries.	A,B,C,D	Medium	Ongoing
Shoaling Harbor/Senge			Blue				
State Forest	State	S	Green				
State Forest	State	V/S	Red	Labor and equipment to implement fire management plan with the state and other land management organizations. Mitigate risks of post-storm fuel accumulation.			
State Forest	State	S	Yellow	Protect aquifers and diversity of ecosystem.	C,D	High	Ongoing
Sylvia State Beach	State	V/S	Yellow	Reutilize Barrier Beach Task Force		Medium	Ongoing
Town Wells	Town	V/S	Green				
Wasque Beach	Private	V	Red				
Wastewater leakage	Town	V	Orange				
Water Quality	Town	V	Orange	Comprehensive water quality management plan to address flooding and drainage into waterways and wetlands.	A,C,D	High	Long/Ongoing
Water Quality - Beaches/Harbor			Blue	Test water quality.	B	Low	Ongoing
Water Resource			Blue	Move Chappy to town water. Conduct groundwater survey/hydro analysis.	B	Medium	Long
Wetlands	All	S	Yellow	Offer more protection against development		Medium	Ongoing
Wildfire	Town/State/Private	V	Red				
Societal							
Access to Chappy	Town	V	Blue				
Aging Community	Town	V	Blue				
Airport	Town/State	V/S	Red				
Airport #1	Town	S	Green				
Airport #2	Town	V/S	Green				
Animal Control/Husbandry	Town	S	Red				
Aquaculture	Town	V/S	Orange				
Aquaculture - Shellfish	Town/State/Private	V/S	Yellow				
Beaches/Tourism	Town/State/Private	V	Yellow	Develop a beach management plan to address cleaning, public access, preservation and stabilization, as well as cost.		Medium	Short
Bike Path/Beach Road	Town	V	Green				
CC Exp	Private	V/S	Green				
Chappy Community Center	Private	S	Blue	Acquire generator and make official storm shelter.	C,D	Low	Short
Chappy Community Center	Private		Yellow	Equip as an emergency center and include in emergency management plan development for the town.		High	Ongoing
Chappy Ferry	State	V/S	Green				
Chappy Ferry	Town	V	Green				
Church Homeless Shelters	Town	V/S	Blue				
Community Center - Chappy	Private	S	Green				
Council of Aging	Town	V	Blue				
Council of Aging	Town	V	Orange				
Dirt Roads	Town/Private	V	Blue				
Downtown Waterfront	Town		Orange	Conduct coastal vulnerability assessment to address economic losses and municipal needs.	A,B,C,D	High	Short
Edgartown School	Town	S	Blue	AC installation, action plan and shelter plan, and awareness campaign.	C,D	Medium	Long
Electricity from mainland	Private	V	Orange				
Emergency Alert System	Town	S	Blue	New radios for harbor master, police, and fire. Repeating tower installed on water tower. Study to improve island-wide communication.	C,D	High	Ongoing
Emergency Communication	Town	V/S	Orange				
Emergency food supply	Town/Private	S	Red				
Emergency Services	Town		Green	Stress effectiveness of emergency communication system and develop plan for improvement and future needs.	A,B,C,D	High	Short/Ongoing
Fire Station	Town	S	Blue				
Fire/Police	Town	S	Orange				
Fuel Supplies	Private		Yellow				
Fuller St. Beach	Town	V	Blue				
Great Pond	Town/State/Private	V	Yellow				
Harbor	Town	V/S	Orange				
Homeless and Churches	Town	V/S	Orange				
Island-wide Cooperating Community	Regional	V	Orange	Develop island-wide cooperative plan and education strategy for food, water, shelter, and fuel during coastal hazards.	A,B,C,D	Medium	Ongoing
Island - Emergency Evac	County	V	Blue	Evacuation plan, including during peak tourist season.	A,C,D	Low	Ongoing

Katama - Neighborhood	Private	V	Yellow				
Katama Bay	Town	V	Blue				
Mattakest - Neighborhood	Private	V	Yellow				
Medical Clinic	Private	V/S	Green				
Memorial Wharf	Town/Private	V	Blue				
N. Wharf boat haul outs	Private	S	Red				
Open Space/Land Bank	Town/State/Private	V/S	Red				
People	Town/Private	V/S	Yellow				
Police Station	Town	S	Blue				
Population fluctuation	Regional	V/S	Red				Long
Pre-existing Use Features	Private	V	Yellow				
Public Transportation	County	S	Orange				
Public/Private Communication Network	Town/State/Private	V/S	Red				Short
Residential Neighborhoods							
Roads	Town		Green				Short/Ongoing
School	Town	V	Yellow				
Senior Center	Town	S	Green				
Shelters - Chappay Fire	Town	V/S	Green				
Shelters - Elementary School	Town	S	Red				
Shelters - Fire Department	Town	S	Red				
Shelters - School/Library	Town	S	Orange				
South Beach - All Beach	State	V/S	Green				
State Forest	State	V/S	Orange				
Stop and Shop	Private	V/S	Green				
Sylvia State Beach	State	V/S	Yellow				
Tax revenue	Town	V/S	Orange				
Tourism	Town	S	Blue				
Town Inventory of Town Equipment/Vehicles	Town	V/S	Orange				
Town Library	Town	S	Blue				
Town/State Beaches	Town	S	Red				
TV Station - Public Outreach	Town/State/Private	V/S	Red				Ongoing
Water Resource	Private	S	Blue				
Waterfront	Town	V	Green				Short/Ongoing
	Town	V	Yellow				