

Responding to The Climate Crisis



Taking Action

- Two major areas of action
 - Adaptation to reduce the impacts of a changing climate
 - Eliminating greenhouse gas emissions (Mitigation)
- Island organizations leading the way
 - Vineyard Power
 - Town energy committees and VSEC
 - The MVC Climate Change Task Force
 - ICAN (recently-formed Island Climate Action Network)
- Today's request
 - Support the MVC in establishing a regional climate adaptation program
 - Work with other Island towns to address regional issues
 - Establish a mechanism/process to pursue MVP initiatives in town
 - Work with Town boards/commissions/departments to ensure adaptation/mitigation concerns are reflected in deliberations

Action Cannot Wait

- 1.5 °C is the new 2 °C
 - Global average temperatures reached 1 °C in 2015
 - New science predicts that the impacts of 1.5 °C will be as serious as the prior expectations for 2 °C
 - GHG emissions must be reduced by 50% by **2030** to limit warming to 1.5 °C
- Flashing Red Lights (summer 2019)
 - Indian cities reach 124 °F amidst longest heat wave ever
 - Earth experienced it's hottest June ever
 - Paris, Berlin, London all exceed 100 °F temperatures in July
 - Anchorage had never reached 90 °F ever; it did so on July 5
 - Arctic forest fires and Russian permafrost melt
 - July 2019: Earth's hottest month ever in human history
 - Historic Greenland ice melt
 - Sea level rise will hit Cape Cod hard (\$7B at least)
 - ***There are many more....***

Some Local Climate Change Impacts

- Sea level rise
- Stronger storms, bigger storm surge
- Increased flooding (coastal and inland)
- Increased coastal erosion
- Heavier rainfall
- Salt water intrusion into wells
- Ecosystem changes (including salt marsh loss)
- Challenges for fishing and agriculture
- Human health issues
- Potential economic impacts



Sea level rise: 1.5-3 feet by 2050



Menemsha Harbor



Five Corners



East Chop Drive, Oak Bluffs



Dock Street, Edgartown

Storms are likely to be...

- Significantly more severe
- Longer lasting
- With larger storm surges and more precipitation



Loss of Coastal Property & Roads



- Compromised access to the hospital, homes, and the ferry
- Potential severe decline in property values
- Increased cost of infrastructure and infrastructure maintenance

Possible responses to sea level rise, storm surges, and increased erosion



Armoring



Accommodation



Retreat

Some potential approaches

- Armoring
 - Strengthen existing infrastructure
 - Limit new armoring (beach loss and erosion)
 - Note: armoring is not allowed to protect houses built after August 10, 1978 (MA Wetlands Protection Act)
- Accommodation
 - Elevate homes, raise roads
 - Stormwater management
 - Dune, bank, salt marsh, beach restoration
 - Zoning changes
- Retreat
 - No new construction in flood zones
 - No rebuilding of substantially damaged homes
 - Unbuilding
 - Abandonment of some coastal roads

Threats to Fishing and Farming

- Fishing
 - Flooding of critical infrastructure and habitat
 - Loss of traditional species as waters warm
 - Ocean acidification threatens shellfishery
- Farming
 - More erratic frosts; severe rain events; longer droughts
 - Hotter hot periods stressing plants; challenges growing hay and raising healthy pastures for animals



Human Health Impacts



- Heat-related disease
- Increased tick and other vector-borne diseases
- Increased asthma and allergies
- Anxiety and depression
- Storm-related injuries

Impacts on Landmarks, History, and Culture

- Lighthouses (erosion)
- Inkwell Beach (sea level rise)
- MV Camp Meeting Association (flood zone)
- Flying Horses (flood zone)
- Menemsha Harbor (sea level rise)
- Edgartown Wharf (storms, sea level rise)
- Historic Architecture

Regional Adaptation Priorities

- SSA resilience
- VH harbor fortification
- Hospital access and operation
- Transportation infrastructure
- Energy grid and supply resilience
- Wildfire preparedness
- Disaster management for high season
- Food and water supply chain



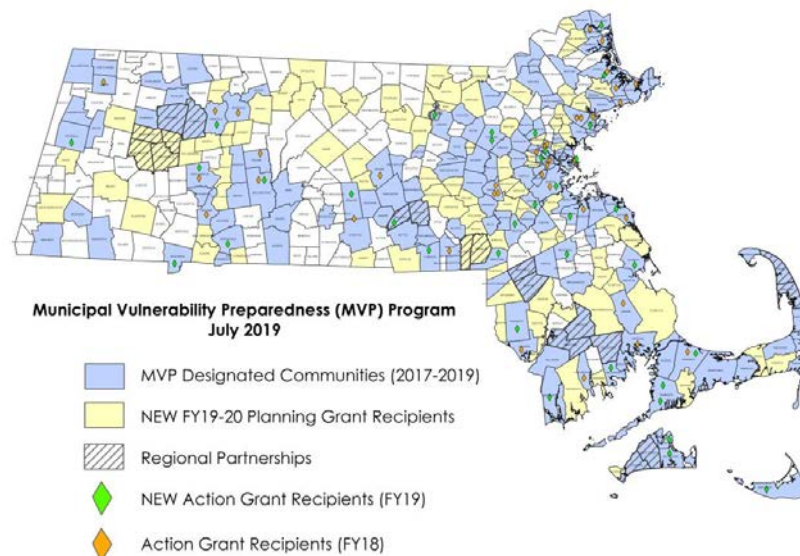
Partial List: Chilmark Priorities



- Menemsha: retreat or fortification?
- Hariph's Creek Bridge
- Forest management
- Electricity infrastructure
 - Microgrids for key assets
 - Underground distribution
- Roadway flooding
- Emergency management preparation for more severe, more lengthy storms

MVP Action Grants

- Collaborations across municipalities strongly encouraged
- Call for applications to be announced September 30th
- Approximately \$12 million available this round



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Many thanks to Liz Durkee and Kate Warner in developing this presentation.