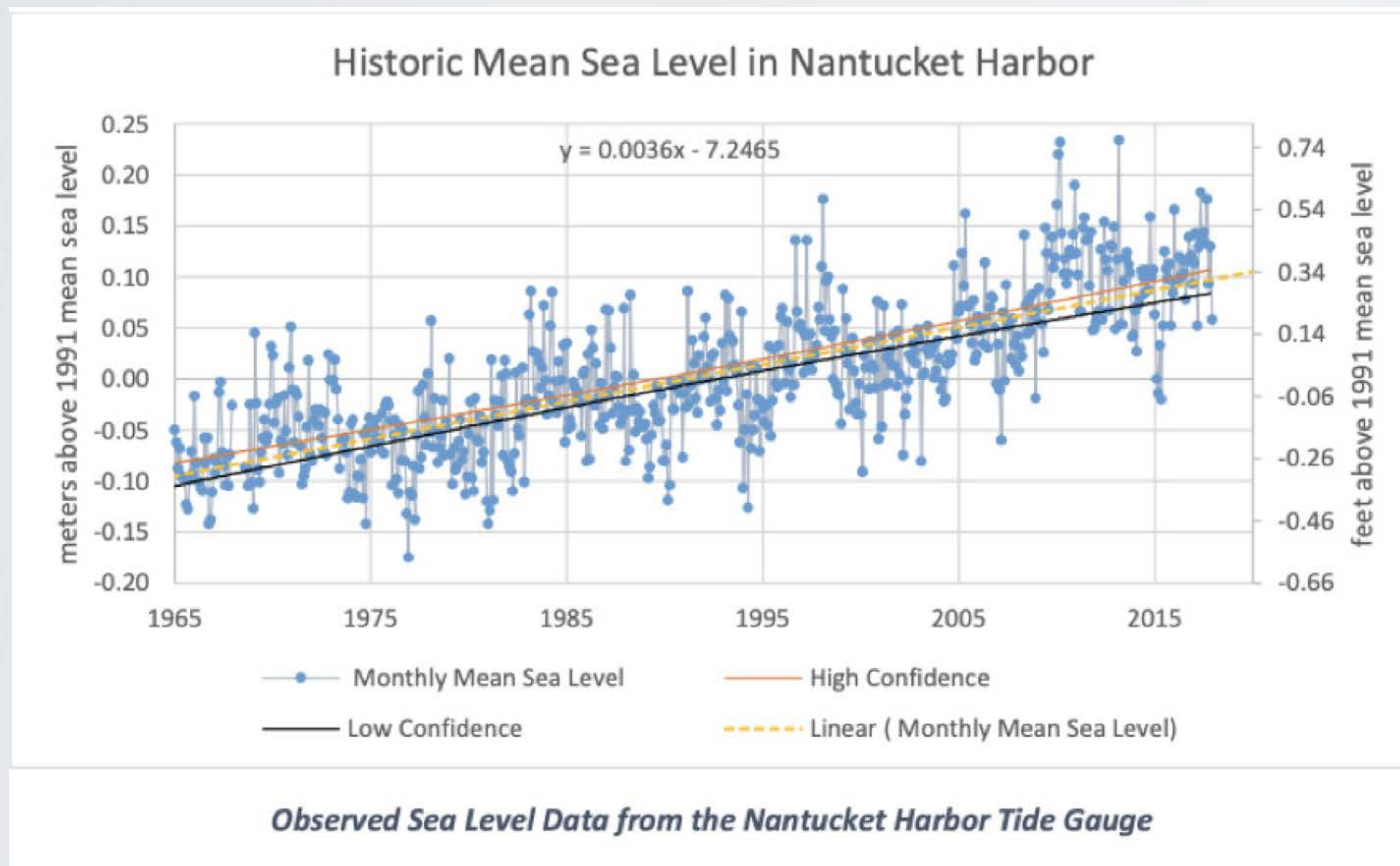


Climate Adaptation & Resilience

Nantucket has always faced high exposure to a range of coastal hazards such as flooding and erosion. By the end of this century and beyond, climate change will increase the frequency and severity of coastal hazards impacting the island, including Monomoy, with continuing sea level rise, high tide flooding and coastal flooding and coastal erosion.¹⁷

Photo: Neil Foley





Beyond the impact on homes and infrastructure, climate change also poses tremendous risk to coastal habitats on Nantucket, including The Creeks in Monomoy, which provide extraordinary ecological and economic value and support many rare and threatened species. These effects – compounded by pollution, disease, contamination, tidal restrictions, nutrient loading, and sedimentation – threaten to significantly degrade and destroy estuaries, including mudflats, eelgrass, shorebird nesting sites, and shellfish beds.

The Town is now working on its [Coastal Resilience Plan](#) (CRP), with a Final Report issued in November 2021 to create a roadmap to implementation for a series of layered flood control and adaptation approaches.

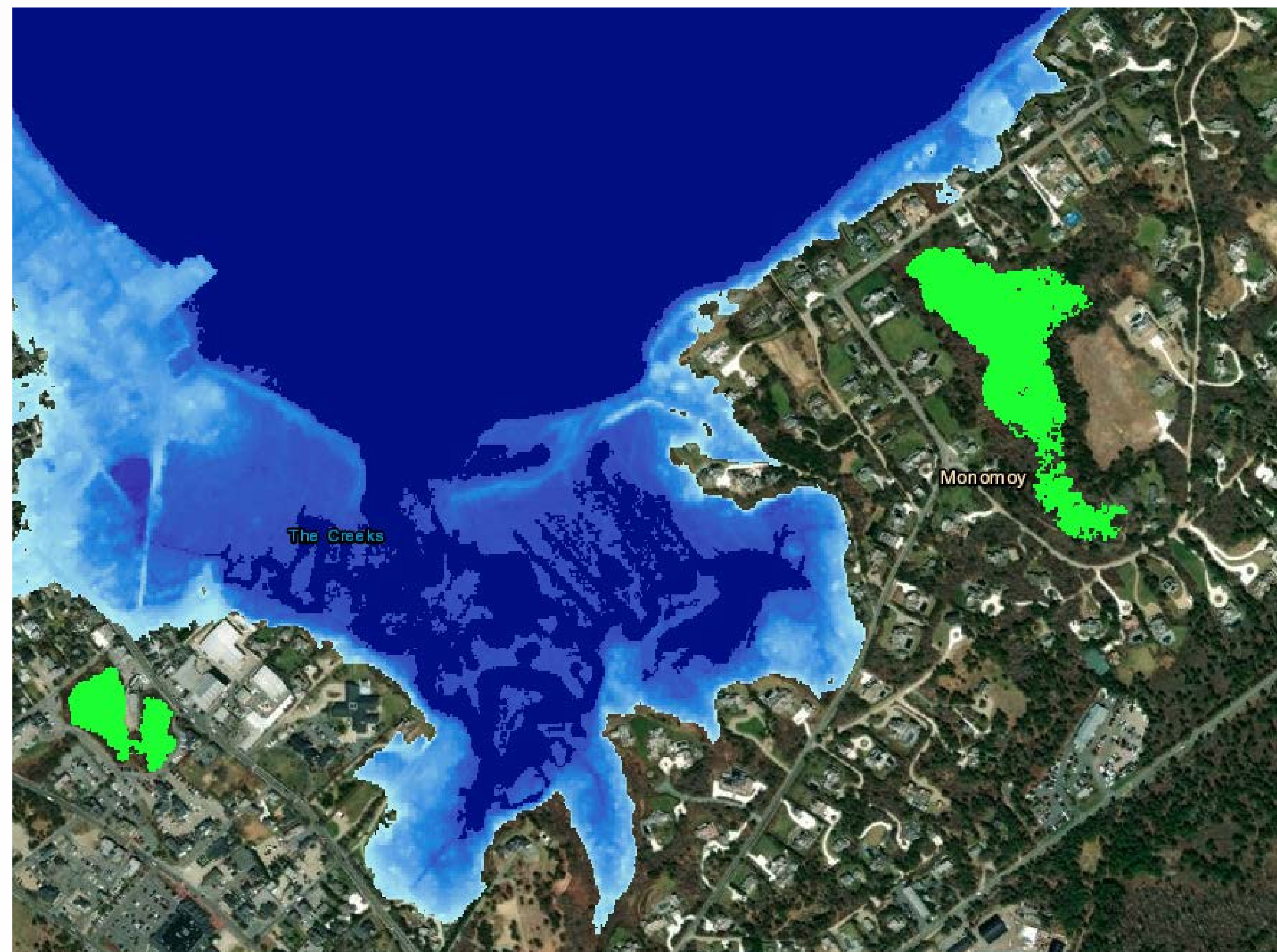
The benefits to the island, and the community of Monomoy, include lessening the loss from storm surges, protecting fragile wildlife habitats and aquatic ecosystems, and helping Monomoy adapt to rising seas and eroding coastlines, while respecting the unique characteristics of our neighborhood.



17 Since the tide gauge was installed in Nantucket Harbor in 1965, the mean sea level has risen by approximately 8 inches [CIT. 20]. Seas may rise 2.62 feet around Nantucket by 2050, and 4.42 feet by 2070 [CIT. 1]. The highest point of the island is a mere 111 feet above sea level, just south of Sankaty Head Light.



Updated NOAA projections on sea level rise for 2050 and 2100 illustrate significant impacts on the Monomoy community.



Impacts of projected 3-foot sea level rise by 2050 and 7-foot sea level rise in 2100. (2022 projections, NOAA sea level rise viewer)

Impacts of sea level rise, storm surges and coastal flooding and erosion in Monomoy result in economic impacts as well, which the CRP has begun to quantify in its projections.



The 2021 Nantucket Coastal Resilience Plan projects risks to homes in Monomoy.

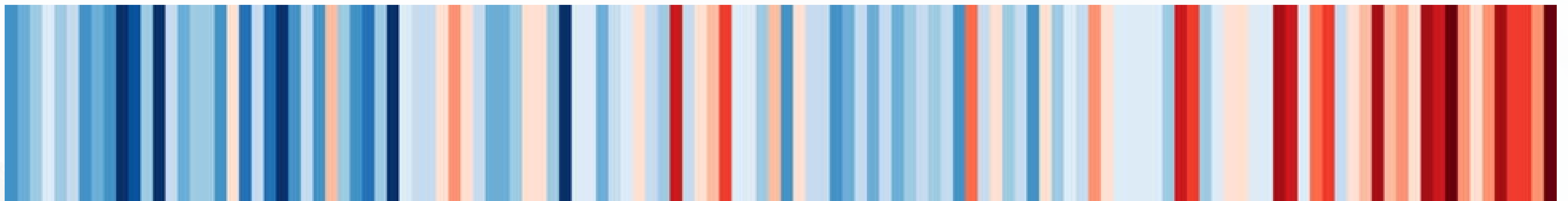
Coastal Erosion Hazard Map



Also of great concern is the updated 2022 projections by National Oceanic and Atmospheric Administration (NOAA) of sea level rise and erosion on Coatue, an important barrier beach that protects the Harbor and Monomoy coastline from heavy seas and storm surges. If the barrier beach of Coatue erodes so much as to disappear, as projected in even intermediate scenarios by 2050, it will have major consequences for the island overall, the bay-scallop fishery in the Harbor and Monomoy.

Through the MCA, Monomoy residents participated in a meeting with CRP project staff to discuss its impact on the island and on Monomoy, and the vulnerabilities to be addressed in Monomoy.

We will continue to participate as the plan is formulated, and future iterations of this MAP will benefit from the risk analysis to our homes, public infrastructure, and historic and natural resources, as well as discussion on proposals for location-specific interventions to reduce long-term risks and increase resilience.



Warming Stripes of Massachusetts from 1895-2020. Annual average temperatures for Massachusetts from 1901-2020 using data from Berkeley Earth, NOAA

Taking Monomoy to Net Zero

The Nantucket Coastal Resilience Plan of November 2021 outlines a series of threats and risks to the island that are potentially devastating and addresses these with a package of mitigation and adaptation efforts that are projected to cost \$840-\$900 million over the next 15 years.

A suite of proposed solutions for consideration includes investments in infrastructure to protect the town core, raising roads and installing underground drainage systems, building bridges across ponds and marshes, elevating roads and bike paths, and introducing a host of interventions to tackle erosion and protect vital utility and transport infrastructure.

Considering these threats, Monomoy is aims to take steps to move to 'Net Zero' and to reduce our overall community footprint to one that is carbon neutral.

Our efforts are aligned with the State of Massachusetts' decarbonization strategy, which strives to achieve neutral emissions and be net zero by 2050, and with National Grid, which similarly aims to achieve the same.

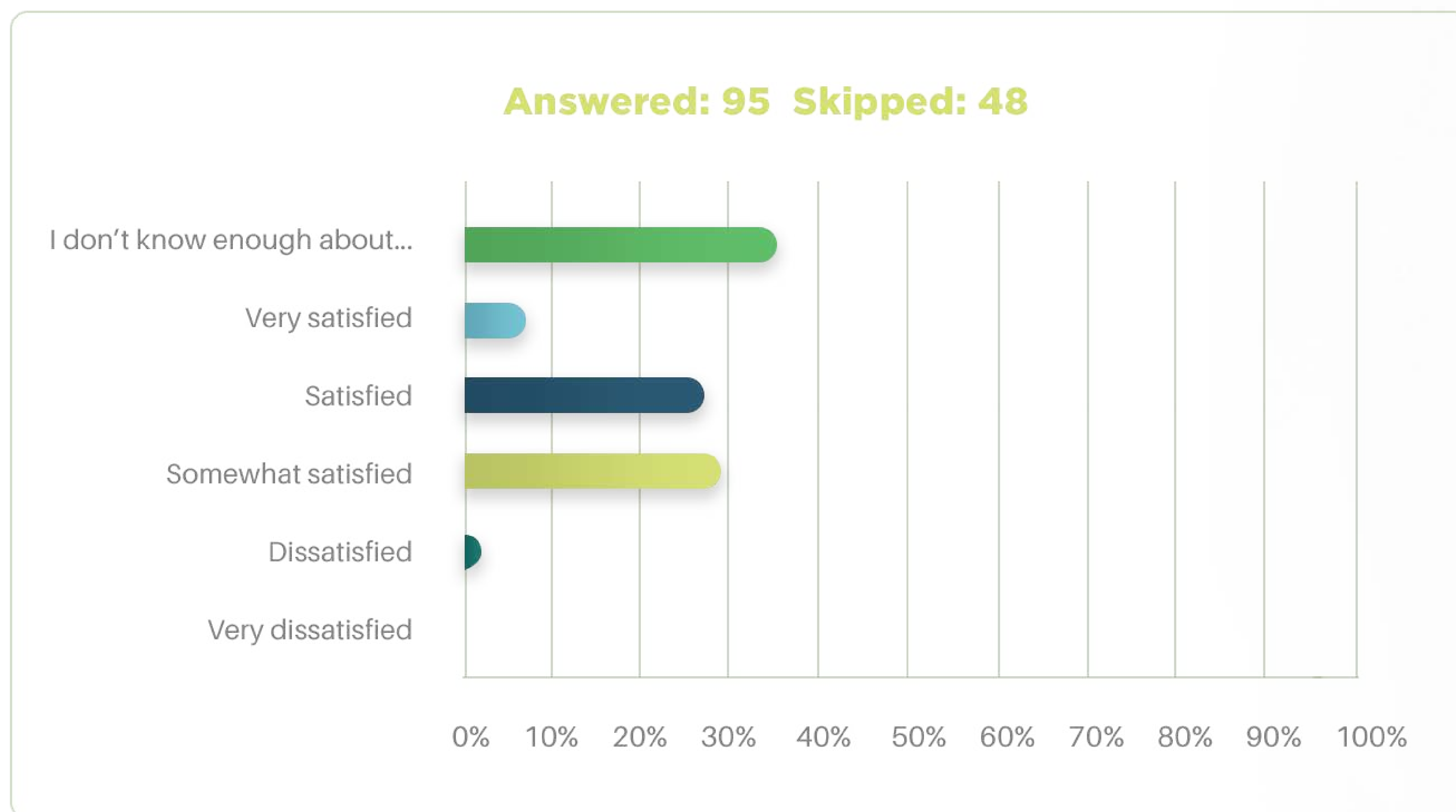
To be Net Zero, Monomoy will strive to generate less emissions than we contribute. Steps will include promoting—on a voluntary basis to homeowners—home energy audits offered by national Grid and the Town's Energy Office, the value of high-efficiency HVAC systems, high quality energy-efficient windows, improved insulation, and where possible, moving from propane to electricity or geothermal for things like home heating and cooling and pool heating.

Our goal: For Monomoy to be the first independently certified Net Zero community on Nantucket.



MONOMOY NEIGHBORHOOD SURVEY HIGHLIGHTS - CLIMATE ADAPTATION AND RESILIENCE

1. Support for Nantucket's Coastal Resilience Plan

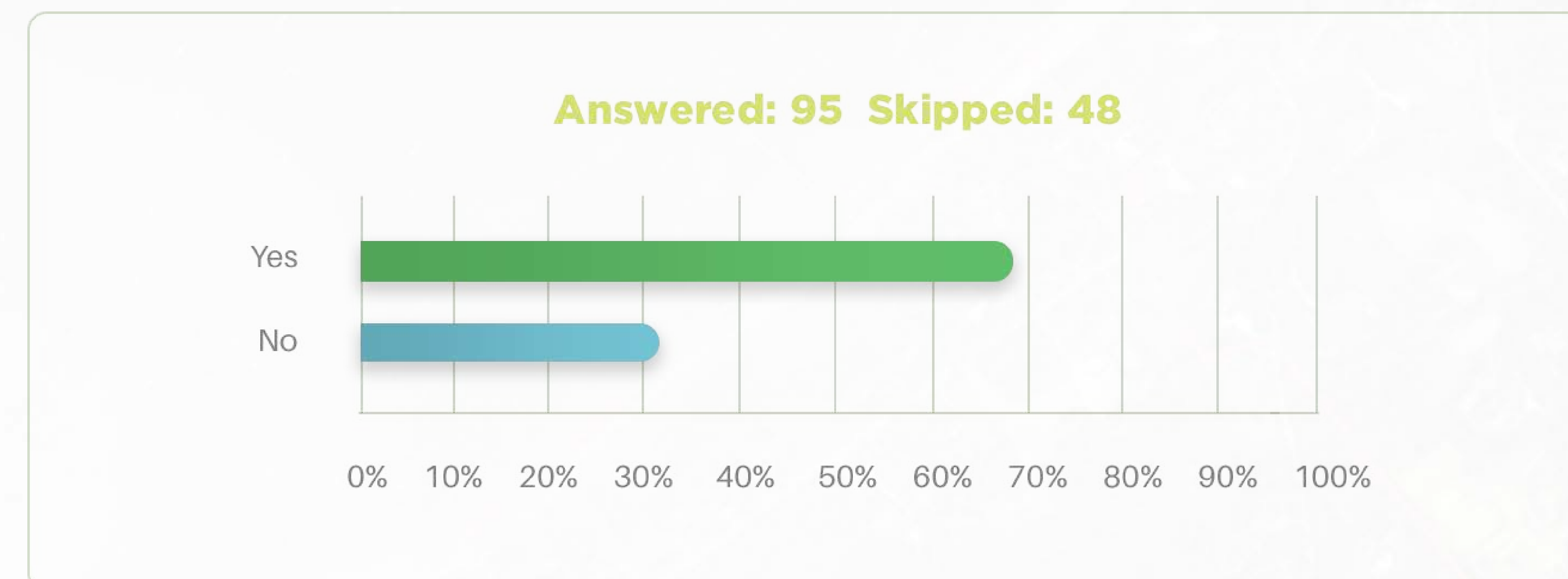


64% of respondents (61) are very, fully or somewhat satisfied with the near-term recommendations of Nantucket's Coastal Resilience Plan, however 35% feel they do not know enough about it to answer this question.

While more education and outreach are required for our community to better understand the CRP, we support the views of the CRP Team notes that Nantucket's one-of-a-kind character that must be preserved. While it is essential to protect the island from coastal hazards and climate risk, we agree it must not be at the expense of the elements which contribute to this unique sense of place, which include Nantucket's ecological resources and habitats, the coastal viewshed and access to the water, the historic built environment and cultural landscapes.

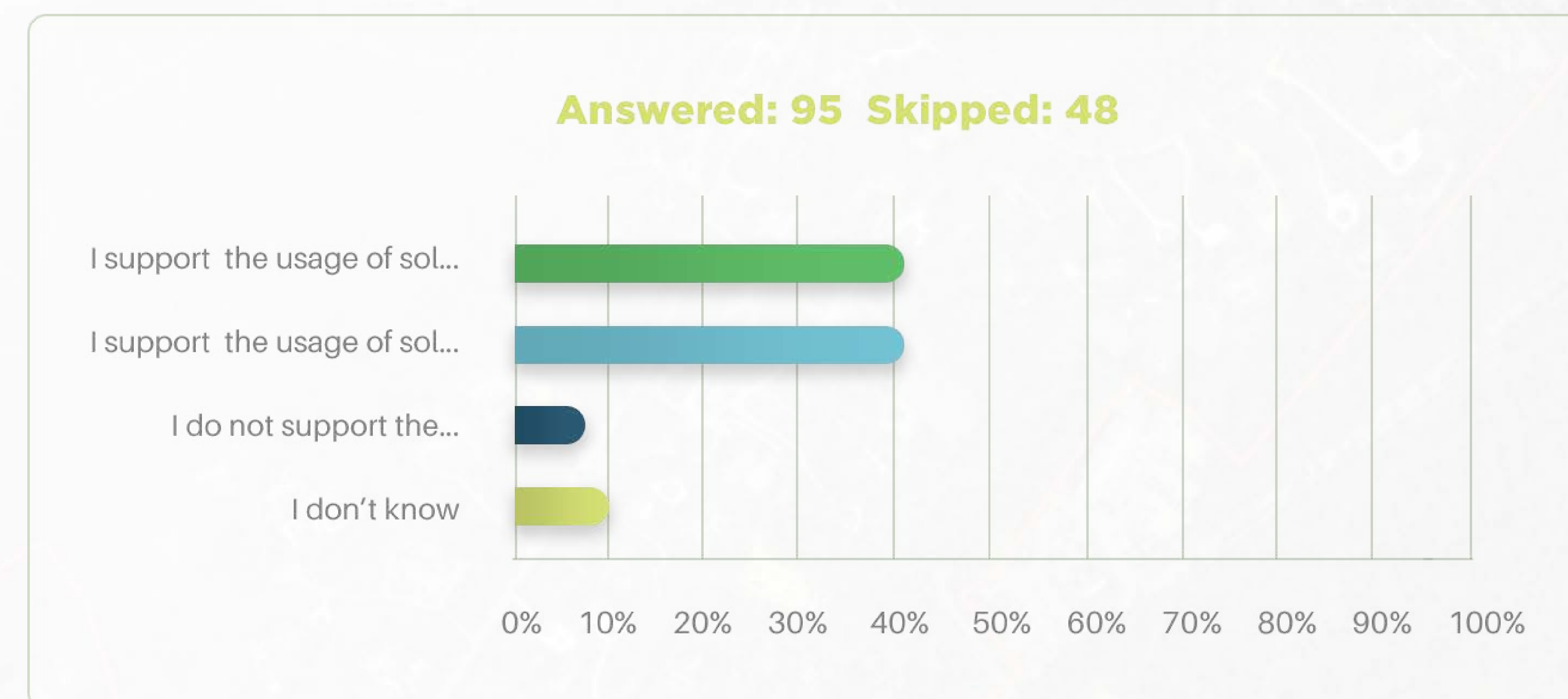
In response to the CRP's proposed ecological restoration efforts for The Creeks in Monomoy, we support nature-based strategies that minimize ecological impacts and maximize ecological and public access benefits. Preserving Nantucket's beaches and coastline into the future for as long as possible should be primary goal.

2. Achieving Net Zero status for Monomoy



68% of respondents support efforts to achieve Net Zero status in Monomoy, which offers a potential way forward for our community to become part of the solution to coping with climate adaptation and resilience.

3. Support for Renewable Energy



Over 82% (78 respondents) support the greater use of solar technology for homes in Monomoy, with a majority caveat by 41% of respondents (39) that any such installations should not be seen or impact the visual character of the neighborhood. 11% responded with "don't know", which suggests a need for greater education and advocacy on the possibilities of renewable energy solutions such as solar.

RECOMMENDATIONS

CLIMATE ADAPTATION & RESILIENCE

1

Support the Coastal Resilience Plan in relation to Monomoy

The Monomoy community supports that CRP recommendation that for the wetland area known as The Creeks, a long-term resource management plan should be undertaken to determine the best course of action, including accretion and salinity modeling to determine if long-term wetland enhancements may be necessary or appropriate.

Monomoy also supports the following CRP recommendations:

- Consider adopting stricter buffer requirements for setbacks to wetlands such as The Creeks that include consideration of climate change to allow coastal habitats and populations to adapt to changing conditions.
- Identify and implement green infrastructure and nature-based approaches to improve flood resilience and stormwater management.
- Integrate climate adaptation measures into all future master plan updates.

2

Strive to Achieve Net Zero Status for Monomoy

Our community supports a range of measures to achieve Net Zero status, starting with an independent carbon audit of the Monomoy community, and increased education and outreach through the MCA.