



RESPONDENTS IN NUMBERS (Preliminary)

- 95 valid responses
- 96% of the respondents are year-round residents of Warren
- 94% live within 5 miles from the coast.
- 76% are homeowners and 19% are renters.
- More than half of the respondents have lived in Warren for over 10 years (52%), while others (35%) are relatively newcomers with fewer than 5 years of residence.
- 90% identified as white, and 10% identified as one or more of the following categories: Black or African American Indian or Alaskan Native, Asian, Native Hawaiian or Pacific Islander, Other.

Community's perceptions and preferences will shape the future of climate resilience in Warren

The Town of Warren is under increasing risk of coastal floods driven by climate-linked sea level rise, intense storm surge and heavy precipitation. While planning for coastal resilience is under way from the town to the regional levels, the community's perceptions and actions will shape the future of this unique coastal town. The goal of this project is to better understand community attitudes and preferences toward climate change and sea level rise in the Town of Warren. This project brief summarizes *preliminary results* from an ongoing survey initiated in April 2022 by students and faculty in a capstone course in Environmental Economics and Policy at the University of Rhode Island.

RESEARCH APPROACH

The student team designed a survey instrument using a cloud-based survey platform. The survey questions are designed to measure perceptions about climate change, past experiences with flooding, and preferences for future resilience projects. The questions were adapted from the Yale Program on Climate Change Communication's Six Americas Super Short Survey and Envision Resilience Nantucket Challenge

Surveys. In addition, the team crafted several questions on coastal resilience projects and people's preferences including their willingness to pay.

The subjects were initially randomly selected from voter registration data to ensure a representative sample. We sent an invitation postcard with a link to the online survey and a unique code to participate. In addition, we sent emails to all available and valid addresses from the voter registration. We plan to conduct additional recruitment during summer 2022.

SURVEY RESPONDENTS

As of May 19, 2022, we have received 95 valid responses. So far, 96% of the respondents are year-round residents of the Town of Warren and 94% live within 5 miles from the coast. 76% are homeowners and 19% are renters. More than half of the respondents have lived in Warren for over 10 years (52%), while the rest is relatively new with less than 10 years (48%). In terms of racial composition, 90% identified as white, and 10% identified as one or more of the following categories: Black or African American Indian or Alaskan Native, Asian, Native Hawaiian or Pacific Islander, Other. The average age was 52, 52% identified as female, 48% as male, and 2% as other. The median highest achieved educational level is bachelor's degree (34%) and the median income category was \$50,000-\$74,999.

PRELIMINARY RESULTS

Perceptions of climate change

A large majority of the respondents are very concerned about climate change and this is higher than the national average. On a five-point scale (Very concerned to Not at all concerned), 76% of the respondents were very concerned, followed by 19% Moderately concerned and 4% Somewhat concerned. None of the respondents expressed that they are "not at all concerned". Although not directly comparable, this result is substantially higher than national attitude based on a similar question (only 33% are alarmed) in a study conducted by Yale, and also slightly higher than respondents in a recent survey conducted in Nantucket, MA (70% are very worried).

Although further analysis is needed, the top reason for concern was "damage/loss of property" and "flooding", followed by "loss of evacuation routes" and "destruction the natural environment".



Image: At the intersection of Market Street and Redmond Street. Vehicle traveling west on Market street through flood water. Photo credit: Janet Freedman.

Impacts of climate change and sea level rise

A substantial proportion of the respondents have already witnessed impacts of climate change and sea level rise. Nearly 40% of the respondents said the effects of climate change have already personally affected themselves, family and friends. While more analysis is needed, nearly 60% have experienced flooding, and 20% said the natural environment has been destroyed. Others have already experienced damages to their properties, power outages, and access to clean drinking water

About 13% of the respondents have experienced increases in insurance premiums due to increased flood risks. In contrast, 58% have not experienced a change while 30% are unsure.

LOOKING INTO THE FUTURE

- **Residents are expecting substantial impacts of climate change**

More than 70% of the respondents expect that climate change will personally affect themselves, family and friends in the coming years. 58% expect that the economic impact of climate change will be severe for the Town of Warren, while 43% expect that the economic impact will be severe personally for their family.

- **Who is responsible for responding to climate change impacts?**

77% think that the government should create uniform policies to coordinate a comprehensive community response to climate change impacts. About two thirds of the respondents believe the Town should use tax dollars to protect Warren homes and businesses. While 30% strongly agreed that the businesses should take responsibility for protecting themselves from climate change, only 18% strongly agreed that homeowners should take responsibility for protecting their own properties.

- **Residents are seeking more information about climate change**

Almost all of the respondents think there should be more information available regarding climate change impacts in Warren (77% said yes, 19% said maybe.) While more analysis is needed, workshops (Monthly meetings to discuss what is being done to prevent climate change) and social media such as Instagram and Facebook were popular methods for information outreach.

PRELIMINARY CONCLUSIONS

The preliminary results from the survey provides several key insights about community's perceptions about climate change in the Town of Warren. The Warren residents are very concerned about climate change and its impact on its economy. The residents have already experienced these impacts personally, and expects the future economic impact of climate change to be severe. Many people expect that the businesses and homeowners to take responsibility to protect themselves from these impacts, while also supporting the government to coordinate a comprehensive community response to climate change impacts.

The project will continue to reach out to the community to collect more surveys in the coming months to increase representation of the voices from the community. An updated project report will be available in the near future.

This project was designed and implemented by students and faculty in the capstone course in Environmental Economics and Policy at the University of Rhode Island. The capstone course is part of the Integrated Coastal Resilience Capstone (ICRC) supported in part by the Rhode Island Sea Grant. We thank Envision Resilience for their financial support. We also thank Bob Rulli (Town of Warren), Teresa Crean (Town of Barrington), Kristin Read (Warren Health Equity Zone) and students and faculty in ICRC.

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