APPENDIX A

Cape Ann/EPA Resilience Project

Workshop #1

April 27, 2022

TOWN GREEN

Creating a Carbon Neutral Community

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Cape Ann - EPA Team

- Greg Federspiel, Manchester Town Administrator
- Valerie Nelson, Gloucester City Council, Water Alliance
- Dick Prouty, TownGreen
- Genevieve Dabrowski, Office of Community Revitalization, EPA
- Abby Hall, Office of Community Revitalization, EPA
- Sheryl Rosner, EPA Region 1
- Ellie Baker, Senior Environmental Planner, Horsley Witten Group
- Krista Moravec, Senior Planner, Horsley Witten Group

Photo credit: Jesse Costa/WBUR.org

EPA's Building Blocks for Regional Resilience

EPA's Office of Community Revitalization

Regional Resilience Toolkit to help identify shared risk to natural disasters and common action plan

Tailored workshops for multiple jurisdictions to…

- Set resilience goals
- Prioritize assets to protect
- Develop resilience strategies and funding plans

Cape Ann Resilience

Build regional collaboration and capacity

Identify on-the-ground projects

Identify funding opportunities

Incorporate findings of parallel efforts

- Typologies of Vulnerability
- Voices for Climate Action

TOWN GREEN

Creating a Carbon Neutral Community

Today's Workshop Outcomes

Gain a broader perspective of climate threats and vulnerabilities on Cape Ann, that confirm and/or add to those identified in past resilience work.

Information needed to make decisions about planning for and responding to short-term and long-term climate threats and vulnerabilities.

Photo credit: Heather Deschenes, Gloucester Daily Times

Agenda

Photo credit: Peter G. Silva, Gloucester Daily Times

Background

- Recap of Recent and Ongoing Municipal Resilience Planning and Projects
- Refresher on Resilient MA Climate Projections

Parallel Projects

- Typologies of Vulnerability (Harvard GSD)
- Voices for Climate Action (TownGreen)

Small Groups – Vulnerabilities

- Perspectives on Cape Ann vulnerabilities

Report Out from Small Groups

Large Group – Are we on the right track?

- What questions do we have?
- What information do we need?

Recent & Ongoing Work Towards Resilience

ESSEX

- Essex Hazard Mitigation Plan (2019)
- Essex Community Resilience Building Workshop Summary of Findings (June 2018)
- Community Exposure to Potential Climate-Driven Changes to Coastal-Inundation Hazards for Six Communities in Essex County, Massachusetts (2016)

GLOUCESTER

- Gloucester Community Resilience Building Workshop Summary of Findings (June 2018)
- Gloucester Coastal Climate Change Vulnerability & Adaption Plan (2015)
- Gloucester Hazard Mitigation Plan (2020)

ROCKPORT

- Rockport Hazard Mitigation Plan (2020)
- Rockport Community Resilience Building Workshop Summary of Findings (May 2018)

MANCHESTER

- Manchester Hazard Mitigation Plan (June 2018)
- Manchester Community Resilience Building Workshop Summary of Findings (June 2018)
- Sawmill Brook Culvert and Green Infrastructure Analysis - Vulnerability and Required Capacity under Climate Change (2016)

Observed Common Priorities

Photo credit: Desi Smith, Gloucester Daily Times

1. Flooding and Roadway Infrastructure
2. Emergency and Evacuation Planning
3. Water Supply Infrastructure and Resource Management
4. Natural Resource Management
5. Public Education and Communication

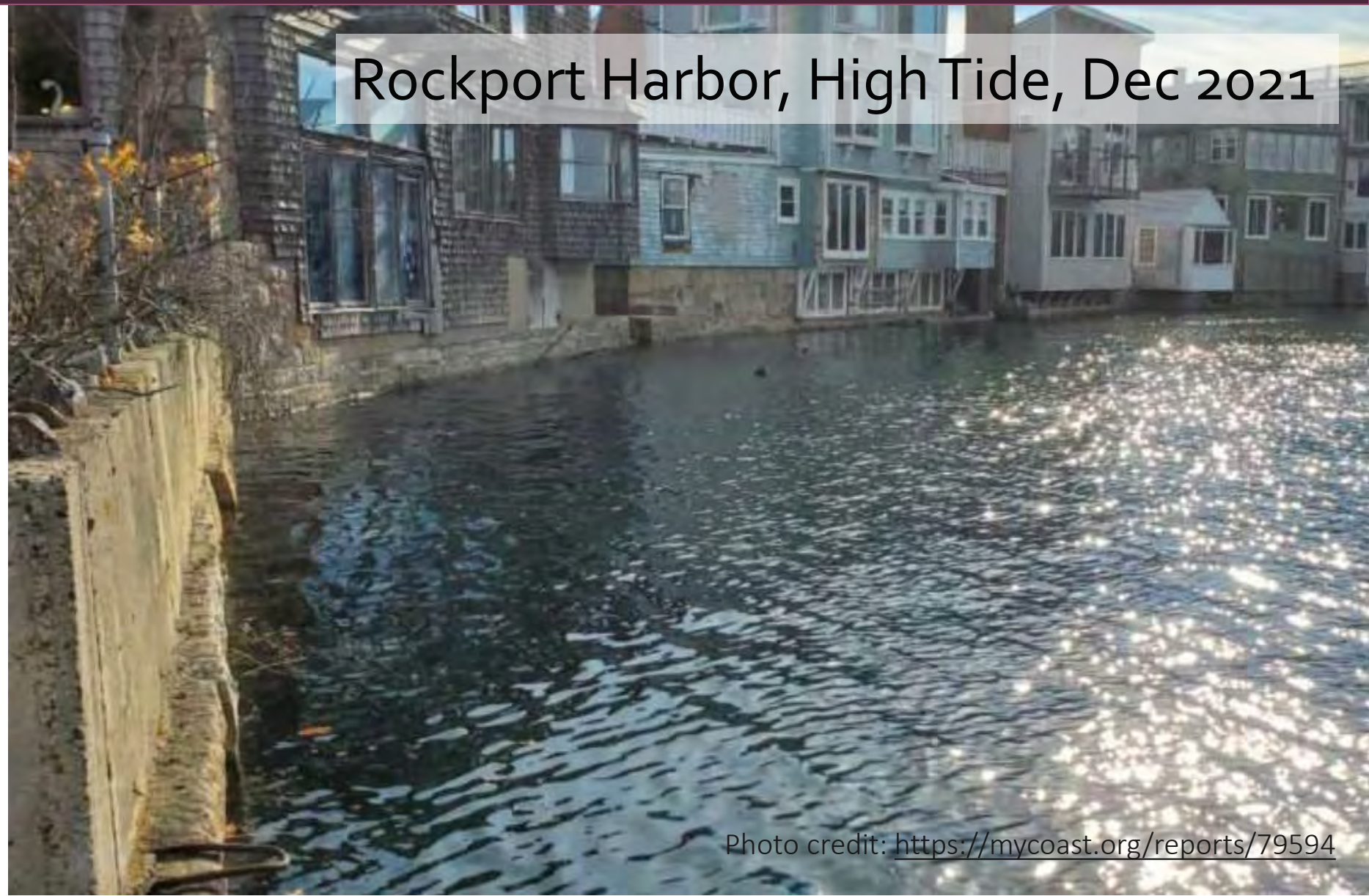
MA Climate Projections

Sea Level Rise and Storms

By 2050:
1.4 to 3.1 feet

By 2100:
4.0 to 10.2 feet

Increasing
storm intensity

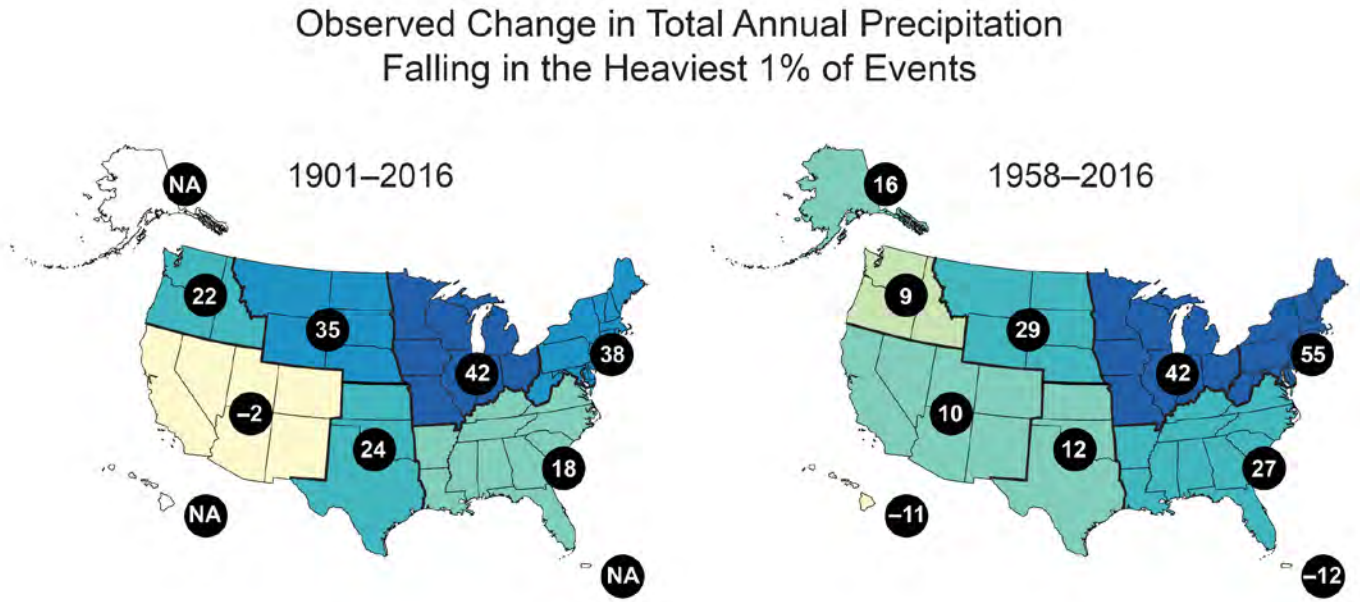


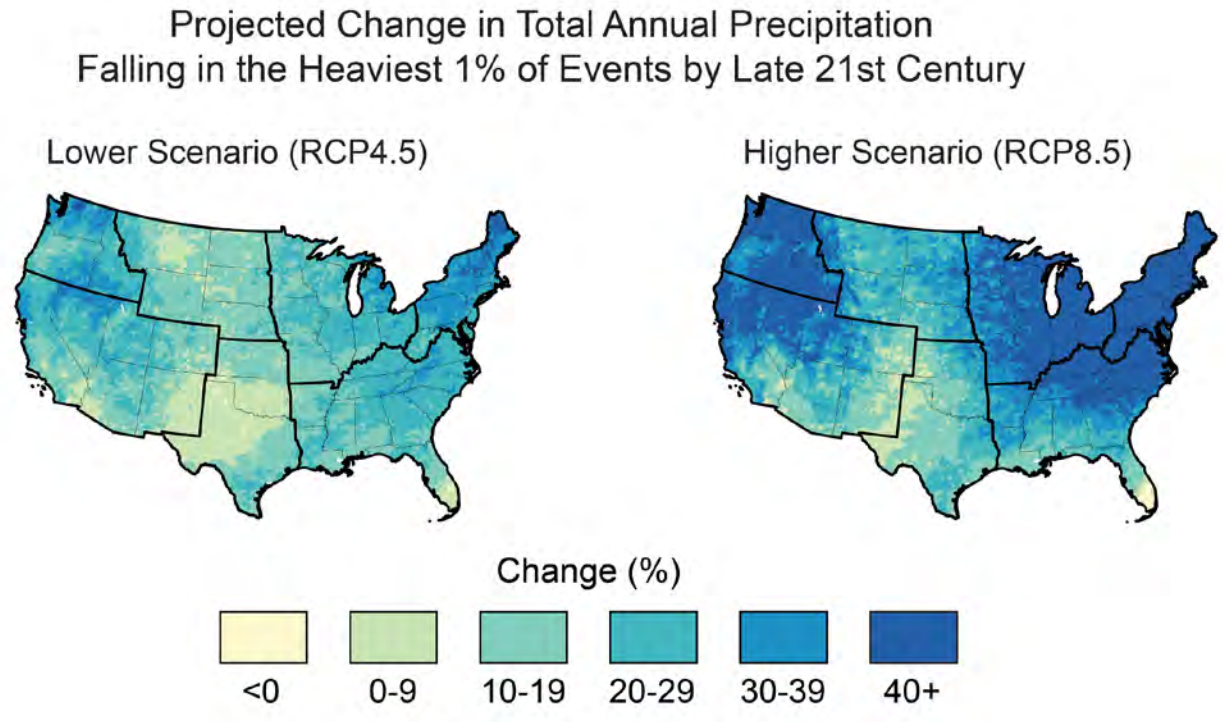
Precipitation and Drought

Wetter Winters
Heavier Storms
More Wet, More Dry

	Mid-Century	End of Century
Total Annual Precipitation (in)	+0.0 to +5.5	+0.8 to +7.2
Total Winter Precipitation (in)	+0.2 to +2.4	+0.5 to +4.1
Annual Consecutive Dry Days	0 to +3	0 to +3

Source: ResilientMA.org





Source: Fourth National Climate Assessment, Chapter 2

Temperature

	Mid-Century	End of Century
Annual Ave Temp	+2.7 to +6.2	+3.5 to +10.8
Days over 90 degrees F	+7 to +26	+10 to +62
Days below 32 degrees F	-18 to -44	-23 to -66

Source: ResilientMA.org

Hotter Summers, Hotter Winters = More energy dependence

Source: Fourth National Climate Assessment, Chapter 6

POLL!

There are a variety of climate change impacts expected on Cape Ann. In your opinion, what are the 3 most important climate change vulnerabilities for Cape Ann communities to be focused on?

- Roadways
- Emergency communication and response
- Water/sewer infrastructure
- Coastal erosion
- Loss of wetlands and other habitat
- Property damage/loss (public and private)
- Power grid
- Local economy (e.g. fishing industry)
- Local culture and community connection
- Climate justice

Other (Please put in chat)

Typologies of Vulnerability

Voices for Climate Action

Photo credit: Desi Smith, Gloucester Daily Times

Small Groups

- Initial reactions and thoughts
- New vulnerabilities?
- What are the short- and long-term impacts of climate change PLUS a Great Storm?

Photo credit: Desi Smith, Gloucester Daily Times

Small Groups Ground Rules

- Respect different perspectives in the room.
- Be open to new ideas.
- Think outside of the box.

Photo credit: Desi Smith, Gloucester Daily Times

Small Groups REPORT OUT

- Initial reactions and thoughts
- New vulnerabilities?
- What are the short- and long-term impacts of climate change PLUS a Great Storm?

POLL: Do you have new priorities?

In your opinion, what are the 3 most important climate change vulnerabilities for Cape Ann communities to be focused on?

- Roadways
- Emergency communication and response
- Water/sewer infrastructure
- Coastal erosion
- Loss of wetlands and other habitat
- Property damage/loss (public and private)
- Power grid
- Local economy (e.g. fishing industry)
- Local culture and community connection
- Climate justice

Other (Please put in chat)

Group Discussion: Are we on the right track?

What decisions do we have to make today (or questions do we have to debate) as a community (region?) in order to minimize impacts to vulnerable people, places, infrastructure, etc.?

Do we need a new or revised plan or different outlook for the future of Cape Ann after or in preparation for the next Great Storm?

If so, what should that plan address and what considerations need to be on (or off) the table as that plan is debated?

What additional information do you need to talk about potential actions?

Next Virtual Workshop

May 23, 2022, 9-11 AM

- Update on Voices for Climate Action
- Discuss policies and strategies to minimize impacts ⇢ Potential projects

Other Announcements

May 17, 2022: Great Storm Webinar

TOWN GREEN
Creating a Carbon Neutral Community

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

EPA Building Blocks Cape Ann Workshop #1
Small Group Major Themes

Workshop held April 27, 2022

Approximately 65 participants from the Cape Ann region attended the EPA Building Blocks workshop. Participants were broken into five small groups of seven to ten people each to discuss the following questions. A summary of major themes from the small group discussion is as follows.

Question 1: Tell us your reactions to the presentations.

Participants appreciated the presentations and felt that the visual depictions of the Great Storm are great public education tools to emphasize the magnitude of impacts. At the same time, the Great Storm is an extreme—smaller storm and/or less extreme impacts of climate change are also important to the discussion. Participants wanted to hear best practices and ideas on how to engage climate deniers, unmotivated residents and officials, and historically underserved communities.

Participants wanted to learn about the region's resilience capacity, and how quickly communities can "return to normal/new normal." Some participants felt that the ecological impacts of climate change and importance of natural systems (i.e., barrier beaches and marshes) to resilience should be discussed.

Commonly identified impacts and/or challenges resulting from the Great Storm include:

- Loss of power grid and communications (especially as it affects emergency response)
- Instability and/or loss of basic infrastructure (sewer and water)
- Local roadways and bridges (including evacuation routes) may become impassable
- Negative impacts to local economy, local businesses, and housing stock

Question 2: What (new or known) vulnerabilities on Cape Ann does the Great Storm scenario expose?

Participants identified vulnerable roads along low-lying marshland, causeways, and bridges including Grant Circle, Thatcher Road, and Cut Bridge. Participants emphasized that Cape Ann can easily become an island in a storm situation. Vulnerable infrastructure facilities include the Gloucester WWTP, Manchester WTP, and drinking water reservoirs; participants said the sewer and water system and power grid is vulnerable. Some said the natural environment is affected by hard infrastructure like sea walls that reduce the ability of marsh/dune systems to move and provide buffers against storms.

The region has a large elderly population and is aging faster than the state and nation. Other vulnerable populations include young people, people without insurance (including health insurance), and people with pets (difficulties with shelters/evacuating). Other vulnerable social and economic aspects include Bearskin Neck (historic character at risk, no official designation) and downtown Rockport businesses and the hospital (in flood-prone areas). Mental health will be affected by climate change and hazards. Chronic and acute sources of stress include uncertainty about future conditions, financial impacts of natural hazards and climate change, threats to and loss of life and property, damage to infrastructure and food systems, etc.

The communities need to start talking about long-term resilience actions, including relocation and managed retreat. Neighborhoods can take emergency preparedness actions and create local aid networks. Public education and engagement about resilience and emergency preparedness is important.

Question 3: How are these vulnerabilities affected by climate change?

Participants said that environmental, health, economic, and social systems are interconnected, with an impact on one system leading to impacts to other systems. Addressing vulnerabilities requires teamwork and recognition of interconnections; small actions in individual sectors or locations have the potential to impact the greater interconnected system. Climate change impacts to the natural environment include beach and dune erosion, increase in invasive species, and a decrease in marshland. Inland flooding should be considered. Participants also expressed certain areas will face access issues in the future (ex. Goose Cove Causeway, Causeway by Richdale).

Question 4: How will these impacts be exacerbated by the Great Storm? What happens after the Great Storm hits? What happens during "recovery" after the storm?

Participants again expressed that a severe storm could happen anytime, not just in 2038. Participants discussed what a post-storm landscape would actually look like, and how Cape Ann may significantly change—it may not be possible to "rebuild as is" due to changes to the natural landscape and lack of financial resources, among other factors. If there is managed retreat, that is a conversation to start having now, not after a storm.

Participants emphasized public education around emergency preparedness. Residents need to understand the importance of early evacuations and know where they should shelter/evacuate to under different storm path scenarios. Several participants expressed interest in regionalization of infrastructure (including wastewater) as a way to invest in projects that yield the greatest benefits to all communities.

Challenges identified during the discussion included:

- Mental health and climate change as it relates to uncertainty and anxiety about future conditions. Participants specifically highlighted younger people as a vulnerable population group.
- Planning for the needs of elderly residents
- Public education that will motivate people to increase resilience versus responding to a crises

Question 5: Are we focused on the most important vulnerable people and places on Cape Ann?

Participants said that the population on Cape Ann covers a wide spectrum of people, and there are many ways to determine "vulnerability." Municipalities may need different engagement strategies for different populations. Essex is considering EJ communities and "climate vulnerable populations" in their planning. Gloucester trying to engage traditionally under-engaged populations for its Climate Action Plan—it is challenging because it takes a lot of time and energy to "meet people where they are."

Participants are interested in creative messaging and visualizations to educate residents. For example, installing images in the community to depict climate change impacts, or drawing lines around town to represent projected flood levels in 2050 or 2100. Education and outreach should touch on different topics to communicate in a way that resonates with people (ex. economic and ecological resilience, emergency services, or transportation).

Participants also talked about building resilience through coordinated regional initiatives and neighborhood coalitions/networks.

Question 6: Are there things happening in other places that might be something to think about for Cape Ann?

Participants discussed educational signage that would help communicate the impacts of climate change and severe storms at the local level. Participants mentioned that change and collaboration need buy-in and action from state and local leaders. Organizing around climate change (ex. road shutdowns) could help get people to understand the potential impacts from major storms.

Small Group Discussion Notes

The following combines the notes by question of all five small group discussions.

Question 1: Tell us your reactions to the presentations.

- **Many participants expressed that the visual depictions of the Great Storm of 2038 impacts are… impressive, shocking, practical, effective, wake up call, terrifying, helpful, strong science, inevitable.**
    - Visualizations are important public education tools and help people put the scenarios into perspective. These are important to increase residents' understanding of the magnitude of potential crisis.
    - At the same time, it is a "delicate dance" of not leading people to despair and inaction given the severity of visualizations.
    - Emphasizes the need for proactive emergency planning and public education.
- **Participants questioned how to convince people (including municipal officials) that resilience actions are needed, especially if they are not concerned about climate change and storms and/or are climate deniers.**
    - The Great Storm of 2038 is an extreme—how would it also be helpful to discuss smaller, more frequently occurring storms?
    - Different groups need different types of communication for this topic.
- **Participants questioned how to involve people that are typically under-engaged on these conversations?**
    - Underserved or ESL populations.
    - Need an inclusive decision-making process.
- **Participants expressed concern about the impacts of the Great Storm of 2038. Identified impacts and/or challenges included:**
    - Loss of power grid will impact communication and emergency response.
    - Instability and/or loss of basic infrastructure (sewer, water)
    - Effect on housing stock.
    - Impacts to local roadways and evacuation routes (including bridges).
    - How loss of above systems and functions will impact civil order
- **Some participants identified topics they felt were missing from the presentation:**
    - The Great Storm of 2038 focused on immediate effects on property and secondary effects on human. There was a lack of emphasis on the cost to humans.
    - What is Cape Ann's resilience capacity—how quickly will different sectors/infrastructure return to normal, and what is the capacity to return to normal or a new normal (i.e., water supply, power, local economy)?
    - Emergency evacuation routes are not strongly considered.
    - Ecological impacts of climate change should be discussed. The natural environment can provide resilience against climate change impacts. For example, barrier beaches and marshes are the first line of defense against storms.

    - The impacts of smaller storms and less extreme climate change impacts will also change life on Cape Ann.
    - Impacts to the local economy and businesses.

Question 2: What (new or known) vulnerabilities on Cape Ann does the Great Storm scenario expose?

How would the built environment (e.g., roads, buildings, water/sewer infrastructure, energy and power grid) be affected?

- Vulnerable roads and bridges include:
    - Roads along low-lying marshland, including Grant Circle and Thatcher Road.
    - The Causeway/Route 133 in Essex. MassDOT is replacing the bridge over Essex River with no change to its elevation. The bridge already floods during the year.
        - Apple Street in Essex is being considered as a path for emergency services.
    - Gloucester Causeway
    - Both bridges (Crupp (?) and Cut Bridges)
    - Seabee Street in Rockport.
    - Route 127/128
- Participants identified the following vulnerable facilities and systems:
    - Sewage system and shared services (Rockport relies on Gloucester). Gloucester WWTP.
    - Drinking water supply. Manchester WTP. Pumping stations. Flat Ledge Quarry in Rockport and Niles Pond in Gloucester vulnerable to overwash and saltwater intrusion during a storm event.
    - Power grid. Lots of power lines in Rockport.
    - Gloucester DPW and senior housing behind Mill Pond. Tide gate at Mill Pond on Washington Street holds water in.
- Several participants noted that coastal development is still happening. Includes rail with proposed new housing.

How would the natural environment (e.g., beaches, coastal wetlands, and harbors) be affected?

- Long Beach. Interaction of the sea wall and dune/marsh systems is problematic. Sea wall prevents marsh/dune from naturally moving/reacting. The area is town property, can do something.
- Impacts to marsh systems and corresponding decrease in capacity to serve as natural buffers.

How would the social and economic aspects of the community (e.g., local businesses and economic drivers, hospitals and social services, historic and cultural resources, places important to the community) be affected?

- Hospital is in flood-prone area.
- Participants identified the following vulnerable populations and social impacts:
    - The region's elderly population will be vulnerable and is growing at a higher rate than the state and nation.
    - Young people

    - Mental health and isolation after an extreme event.
    - People without insurance, including health insurance.
    - People with pets (difficulties with shelters and evacuating).
- Participants asked where residents would evacuate to, and where emergency shelters are located.
    - Participants wanted to know what sort of power backup/microgrid capacity the region has. Power generators can be helpful.
    - Higher ground areas at Mount Pleasant, Turkey Hill in Ipswich, and housing above Blackburn Circle.
- Bearskin Neck is not officially designated as a historic district; FEMA regulations would not allow it to be rebuilt as a historic community. Potential loss of character.
- Downtown Rockport businesses are right on the shore and are vulnerable to SLR and storms.
- Thousands of people in Gloucester that work in Blackburn Industrial Park—only one access point in/out. One accident can "trap" people in there.
- Connections to ensure adequate food supply would be impacted.
- Financial impacts: how will the communities secure financial resources to rebuilt, and how long will that take? How will storms affect communities' bond ratings and residents' insurance?

Participants also discussed possible solutions and actions to raise resilience:

- Communities need to identify areas that residents will need to move away from (i.e., relocation, managed retreat). Communities need to start having these conversations with the public.
- Elevating roadways prioritizes the inland side of the roadway and affects infrastructure (ex. sewage system).
- How will electrification along the coastline influence resilience?
- Local neighborhood emergency preparedness and response systems can be developed. Create a neighborhood communication system. Neighbors helping neighbors.
- Public engagement and education. Raise awareness and engage different populations, be equitable. Paint Factory in Gloucester has climate change visualization mural—is that an effective educational tool? Could presentation be shown in cinema before films?
- Public education about the need for residents to follow emergency evacuation and other emergency situation directives.

Question 3: How are these vulnerabilities affected by climate change?

- Erosion is incremental, slope on beaches and sacrificial dunes are washing away over time.
- Invasive species are a concern because there is less winter die off.
- Lack of marsh protection as a result of deterioration of plant structure in the marsh.
- Inland flooding is also an issue that should be considered in this area.
- Systems are connected and one impact leads to other impacts - environment, health, economic, social. Requires teamwork and recognition of interconnections. Little actions in individual sectors or locations can impact the greater interconnected system.
- Using Woods Hole data set now on applications…definitely seeing vulnerabilities. MEMA interested in project, using Woods Hole Data.

- I moved to Gloucester 33 years ago and I have been on Goose Gove for 23 years. I am concerned about what will happen with Goose Gove Causeway with climate change. Access to our homes may no longer be an option in the future. It seems like the Causeway by Ridgedale is also going to be vulnerable too.

Question 4: How will these impacts be exacerbated by the Great Storm? What happens after the Great Storm hits? What happens during "recovery" after the storm?

- Historical storms
    - Reality check: Cape Ann is vulnerable to storms and nor'easters. A severe storm can happen anytime, not just in 2038. 1938 Hurricane isn't the only storm of record. Look to history for other examples.
- Resident needs
    - Mental health around climate is critical. For young people especially, they understand climate and want change. It is something they take into consideration when planning for their futures.
    - Residents need comfort and reassurance that planning is happening at municipal level.
    - How do we respond to the needs of elderly residents? Cape Ann in general has older demographics.
- Emergency preparedness
    - Public education around emergency preparedness is imperative.
    - People have some responsibility for their own preparedness. Early evacuations should be emphasized; during storm situations, evacuation may not be possible.
    - Multiple evacuation scenarios might be needed depending on the storm path (clear messaging on what to do). Make sure people know where they should shelter/evacuate to beforehand.
- What does "recovery" look like?
    - Ultimately, "recovery" is a question of whether Cape Ann can fully recovery. "We need to think about a change post-storm landscape. The landscape is not the same, and we don't necessarily rebuild as it was… there won't be guaranteed money to do that. If there's a massive storm that hits Boston as well, we're likely not first in line for money from federal sources, etc. Do see this area significantly changing after a storm."
    - Need to move from "rebuild" and "build" and separate the two. Between now and 2038 do some building that changes the landscape radically. If there is some managed retreat, we need to start doing it now long before the storm happens.
    - Depends on what private property owners/state decide to do when we get there…are people getting the message now or waiting until it happens. May look different if acting 5-10 years versus doing nothing.
    - Resilience is an education issue. People think about what's happening in the community versus personal impacts differently. The public needs to be motivated to bring about the desired result as a collective body. Need to support expenditure of funds…
- Regionalization of resources

- Communication and Regionalization…have administrators been brought together yet? Same for utilities.
- A lot of regionalization going on (regional IT for an example). Individual projects going on without combined efforts…everyone at different schedules/timelines. Common threads will be expensive…funds are targeted toward shovel ready projects. No common themed projects right now. WWTP project has been put out there. Location not anticipated to be changed…factoring in climate change?
- Prospect of regional WWTP is interesting, especially when considering new development, based on existing capacities/limitations. Need to look at greatest benefit of all communities.

Question 5: Are we focused on the most important vulnerable people and places on Cape Ann?

- Who is vulnerable?
  - The population on Cape Ann covers a wide spectrum of people. As part of planning, cannot overlook those who do not have ready access to resources (e.g., people who do not have cars, may not pay attention to news because of other demands…).
  - I think some thought should be given to the impact on wild animals on Cape Ann and their communities. They also cannot escape.
  - How can ecological and economic evaluations be used to map vulnerable populations in Cape Ann? There are many different ways to define "vulnerable," and we need strategies to address all of these options.
- Town efforts
  - Essex has included EJ communities and other "climate vulnerable populations" (ex. senior citizens) into their planning efforts.
  - Gloucester working on Climate Action Plan now. Actively trying to engage populations not currently at table. Hard to get people there, interns working on outreach. Have created connections at local churches, high school, locations for seniors in downtown Gloucester. The conversation around climate is not fully capturing those voices yet in Cape Ann, but it is challenging because it takes a lot of time and energy to "meet people where they are."
- Climate change communications and visuals
  - We need to make sure that we communicate about climate change in a way that resonates with people and brings them to the table. Whether that is economic resilience, ecological resilience, emergency services, transportation etc., this is a multi-faceted comprehensive challenge, and we need a suite of options.
  - There is already so much data on resilientma.org and there are so many organizations and communities trying to work on this issue. It feels like we are so focused getting the data, that we do not work on the communications piece as much. I think we need to do a better job of making flood scenarios very accessible to people. For example, we could do a line around town with flooding levels expected for 2050/2100. It would be a reminder to people of what could happen, and it would be an easy, low maintenance visual.

    - From working on the shore, I've learned that people learn to build seawalls to protect their property, but they do not think of their neighbors. We need a mechanism or organization for all of us in Cape Ann to get together and share what resources we are using and what strategies we are implementing. We need to make sure that we are doing in one place is not inadvertently hurting another place.
    - I think we could do some images throughout the community to have some consistent visuals depicting climate change impacts.
    - Scenario analysis broadens understanding of the storm situation. It relates to many different kinds of people, as opposed to a drier discussion of infrastructure costs to municipalities. Theoretical/visual storm event stretches the mind, opens discussion to local homeowners, and makes it more relatable.
- Other topics
    - Near-term impact of climate change in New England projected to be in form of storm intensity changes and sea level rise. Climate models will need to be renewed with new data periodically. See Woodwell Institute research.
    - It will be important to build neighborhood coalitions and networks to advance resilience in the future and strengthen the ability of communities to respond to emergencies. Keep your neighbors close.
    - We also need a coordinated regional effort to share resources.

Question 6: Are there things happening in other places that might be something to think about for Cape Ann?

- There are signs all over the Netherlands about what sea level means in their neighborhood.
- At Plum Island near the nuclear site, they have a sign that says "beyond this point there is no evacuation." Maybe we should do a sign pointed at the Causeway saying that "in a high tide storm, this will be under water" just to get the community thinking about those kinds of impacts that are coming.
- I think we really cannot lose sight of the fact that the changes that we need to make starts with state leadership. We also need a North Shore model for regional collaboration so the Cape Ann communities can all work together more closely.
- One option we could consider is sitting down and doing a strike on a particular road to shut it down (one of the roads that is expected to flood during a major storm event). Or we could have a government organized event where they agree to close a road on a certain day for a certain period of time to get people to understand the potential impacts from these major storms.

Whole Group Discussion Notes

- We have talked a lot about climate change impacts on the seaward side, but just recently there was a 22-acre fire in Rockport behind the cemetery in a heavily forested area. I think we need to think about the impacts with dry spells and forest fires too. We should not only focus on the water.
- What decisions do we have to make today (or questions do we have to debate) as a community/region in order to minimize impacts to vulnerable places/people?

- For the cottages in Rockport, we need to make decisions soon about protecting those places.
- We need to work regionally to get the best bylaws and regulations in place to be protective of the future. I am not sure this is happening on a regional basis. We are waiting for help from the state with land use issues. “Business as usual” is still in full force in the community.
- A regional forum is needed for these kinds of discussions. We need our town administrators to get together on Cape Ann. The conversations require projects that are beyond the purview of each town (power grid, water resources, etc.), I hope that an agreement comes out of this that town governments will have a regional committee to discuss these issues.
- Not just with the current situation with climate change, not just emergency situations, each town wants to make its own decisions. But we do not have the resources for even just regular comprehensive planning concepts. We currently lack the resources, and again this is a need on a regular basis not just for climate change. We lack this for zoning/planning and there is a real pull on resources. MAPC is fine, but it does not have the resources to actually lead to action. The towns could pull from people at a central location on the North Shore to get more capabilities as needed. These kinds of regional conversations need to be happening more regularly.
- I feel like there is kind of a uniformity of ideology here. I wonder if the conversations were including climate deniers, that we would have other perspectives. The difficulty here is that there is likely to be opposition on these topics.
- For for-profit businesses, we analyze issues from all angles and look at a below and above cut line. We do not have the financial resources to solve all of our issues. We need to figure out what we can do for the biggest “bang for our buck,” because we only have limited resources. We need to figure out what are the most important issues with the biggest return.
- I think it is important that the people in the communities are the ones who decide what priorities are. Some ecosystems may be priorities for some residents, and they will want to spend more money on certain resources than on other issues. We need to bring in peoples voices to those discussions. It is not just money but also values and attachments and the wishes of the people.

Cape Ann/EPA Resilience Project

Workshop #2

May 23, 2022

TOWN GREEN

Creating a Carbon Neutral Community

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Cape Ann - EPA Team

- Greg Federspiel, Manchester Town Administrator
- Valerie Nelson, Water Alliance
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- Ellie Baker, Senior Environmental Planner, Horsley Witten Group
- Krista Moravec, Senior Planner, Horsley Witten Group

Photo credit: Jesse Costa/WBUR.org

EPA's Building Blocks for Regional Resilience

EPA's Office of Community Revitalization

Regional Resilience Toolkit to help identify shared risk to natural disasters and common action plan

Tailored workshops for multiple jurisdictions to…

- Set resilience goals
- Prioritize assets to protect
- Develop resilience strategies and funding plans

Cape Ann Resilience

Build regional collaboration and capacity

Identify on-the-ground projects

Identify funding opportunities

Incorporate findings of parallel efforts

- Typologies of Vulnerability
- Voices for Climate Action

TOWN GREEN

Creating a Carbon Neutral Community

Agenda

Photo credit: Peter G. Silva, Gloucester Daily Times

- What We Heard on 4/27
- Updates on Parallel Projects
  - Typologies of Vulnerability (Harvard)
  - Voices for Climate Action (Harvard)
  - Local interviews
- Small Groups – Ideas and actions to move forward
- Report Out & Large Group Discussion
  - Priorities for Cape Ann
  - Information Needs

Recap from WS#1

PURPOSE

Understand vulnerabilities on Cape Ann to a Great Storm and Climate Change

What's at risk?

- Gloucester WWTP
- Manchester WTP
- Power grid
- Roadways and bridges
- Hospital
- Natural systems

Who's at risk?

- Older residents
- Younger people
- People without insurance
- People with mental health conditions
- Downtown Rockport businesses
- Lower income areas
- Traditionally under-engaged populations

Recap from WS#1

Challenges

- Mental health impacts related to stress, anxiety, uncertainty about future conditions
- Planning for the elderly
- Public education to motivate people to prepare vs responding to a crisis
- Engaging “climate deniers” and unmotivated residents
- People most vulnerable are difficult to reach
- Capacity to “return to normal” or “rebuild as is”

Ideas to think about

- Communities working together
- Neighborhood coalitions, networks
- Public education on emergency preparedness
- Creative messaging and visualizations
- Topics that resonate with people

Today's Workshop Outcomes

Ideas and projects to move forward that will help address vulnerable places, people, and infrastructure on Cape Ann.

Information needed to make decisions about planning for and responding to short-term and long-term climate threats.

Photo credit: Heather Deschenes, Gloucester Daily Times

Small Groups: Taking Action

Photo credit: Mike Springer, Gloucester Daily Times

"Gray" infrastructure

"Green" infrastructure

Policies and regulations

Public awareness and education

- *Actions and ideas for Cape Ann*
- *Opportunities? Challenges? Who benefits?*
- *Collaboration?*
- *Information needed?*

Report Out & Group Discussion

Actions generated by small groups

- Where can this take place?
- Challenges and opportunities
- Who benefits, who does not?
- What are the opportunities for collaboration?

Report Out & Group Discussion

What are priorities?

What are capacity needs for municipalities or the community as a whole?

What more information is needed to move these ideas and projects forward?

Thank you!

TOWN GREEN
Creating a Carbon Neutral Community

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

EPA Building Blocks Cape Ann Workshop #2 Summary

Workshop held May 23, 2022

Approximately 45 participants from the Cape Ann region attended the EPA Building Blocks workshop. Participants were broken into four small groups of eight to ten people each to discuss the following questions. A summary of major themes and matrix of recommendations from the workshop are as follows.

Q1. What are your reactions to the Scenario 1 (adaptation ideas) presentation?

Two small groups discussed this question. Several participants expressed that, while the Scenario 1 presentation was striking, the reality of Cape Ann's vulnerability to natural hazards is not surprising or unexpected. Several participants noted that they can observe flooding at critical infrastructure today or have seen attempts to mitigate hazards that were not present in years past. A few participants mentioned specific projects that were pro-active examples (e.g., Conomo Point seawall repair/reconstruction and Gloucester Wastewater Treatment Plant potential investments) of mitigation strategies or less pro-active examples (e.g., reconstruction but not raising of causeway in Essex) of mitigation strategies.

Other comments expressed:

- Concern that overly academic and data-heavy presentations are disconnected from Cape Ann residents and may actually cause individuals to become entrenched in current mindsets.
- Optimism that larger education and engagement initiatives will gain steam as more information is gathered.
- That certain adaptation ideas are poor options (*e.g.,* no longer maintaining roads) or should be advanced further (*e.g.,* managed retreat).
- That this is an emotional topic, and climate change will bring substantial disruption and costs—financial and other costs—into the community.

Q2. What are actions or ideas to address vulnerabilities and build resilience on Cape Ann?

Participants discussed ways to mitigate vulnerabilities and increase resilience to natural and climate change hazards. Facilitators prompted participants to think about potential actions and ideas using the following questions:

- Where would actions/ideas be applied or implemented on Cape Ann?
- Who would benefit? Who would not benefit?
- What are the challenges and opportunities for implementing on Cape Ann?
- Are there opportunities for collaboration among the municipalities on this project?

Each action or idea was classified as a "gray" or "hard" infrastructure project; "green" infrastructure project; policy and regulation; or public awareness and education effort.

"Gray" or "Hard" Infrastructure Projects

Gray or hard infrastructure projects are those related to man-made structures and systems such as roads or water and wastewater treatment facilities, pump stations, reservoirs, and pipes. Broadly speaking, gray infrastructure recommendations were related to either:

- Concerns about infrastructure facilities and/or systems that are vulnerable due to a lack of redundancy (*e.g.,* egress routes, and utilities), or
- Concerns about infrastructure facilities and/or systems that are physically exposed to climate hazards (*e.g.,* coastal roadways, bridges, wastewater treatment plants, and drinking water supplies).

Participant recommendations were largely focused on the effects of storms, flooding, and sea level rise on infrastructure, although drought was also mentioned. Participants emphasized a need to adapt infrastructure maintenance and improvement planning to account for climate projections and current hazards. Participants noted the following needs and information gaps related to gray infrastructure:

- Evaluations of climate risk and vulnerability for utility systems
- Assessing the prior geological records for Cape Ann to determine if there is information that may be useful moving forward with resilience efforts
- Developing graphics to inform infrastructure assessments and planning (*e.g.,* sea level rise projections)
- Assessing affordable housing relocation options
- Determining feasibility of short ferry service in the region
- Bringing utility providers into regional planning conversations for climate preparedness

"Green" Infrastructure Projects

Green infrastructure projects are those that enhance and maintain natural systems. Several participants expressed support for using natural systems to mitigate or adapt to the impacts of climate change in the region. In particular, residents recommended that natural systems were protected, restored, or enhanced to improve Cape Ann's climate resiliency.

Priority resources that were discussed included wetlands, barrier beaches, and trees. In addition to targeted proposals for green infrastructure, some residents proposed the development of a comprehensive inventory of natural resources for the entirety of Cape Ann. With regard to green infrastructure, participants noted the need for an assessment of quarries to determine their feasibility for restoration and/or reuse (*e.g.,* Halibut Point in Rockport).

Policies and Regulations

Policies and regulations are those actions that seek to mitigate risks to people, property, and natural systems and increase their resiliency through changes to municipal planning and regulatory tools. Many participants expressed support for the development of policies and regulations that improve climate resiliency in Cape Ann. Recommendations generally coalesced around the following themes:

- Incentivizing climate-smart development (*e.g.,* net zero requirements, stretch building codes, larger setbacks, or buffers in areas prone to flooding)
- Protection of natural resources through regulations
- Sharing model language and best practices across communities in Cape Ann
- Evaluation of projects and developments that have been approved but do not adequately consider potential climate impacts
- Hiring sustainability and climate focused municipal staff to improve municipal efforts and break down silos between local government departments

Participants noted the following needs and information gaps related to policies and regulations:

- Assessment of potential costs and funding in the region for climate related events (*e.g.,* insurance reimbursements for severe storms, and state and/or federal recovery funding)
- Case studies of zoning for resiliency in coastal regions
- Determination of points in time or 'triggers' where changes will be required versus recommended (*e.g.,* terminating land leases in areas most susceptible to sea level rise)

Public Awareness and Education Efforts

Public awareness and education efforts focus on engaging the Cape Ann communities and their residents, especially as it relates to empowering residents to act and participate in inclusive conversations about natural and climate change hazards. In addition to providing targeted education proposals, participants provided broader suggestions for the development of public awareness and education tools. These included:

- Developing education and awareness efforts that are "bottom up versus top down"
- Focusing education efforts on addressing community priorities with accessible, positive, resident-focused language that encourages participation and engagement through existing community networks
- Developing outreach language that weaves together consequences for both people and infrastructure, capturing human scale impacts and recognizing mental health stressors.
- Integrating information about the benefits of natural systems in education and outreach materials
- Developing education materials at the regional level so all Cape Ann communities can draw from tools as needed, particularly after storm events when it is easiest and most important to capture residents' attention

Full Group Discussion

Following the small group discussions, the full participant group reconvened and were given the opportunity to identify any priorities from the small group report out that should be elevated. Of note, multiple participants expressed support for recommendations that involved regional collaboration and emphasized that regional solutions should be prioritized moving forward. Several participants identified regulatory, zoning, and policy actions as a top priority. A few participants proposed new recommendations for policies. These included:

- Developing regional climate change resilience planning, zoning, policy, and regulatory resources that Cape Ann communities could refer to as needed
- Developing a collective climate policy vision for Cape Ann to inform needs in the region
- Developing and/or finding existing funding tools to assist communities in implementing priorities
- Developing policies and regulations that facilitate the reduction of carbon emissions to mitigate sea level rise

In addition, one participant proposed supporting general education efforts by connecting with the editor of the Gloucester Times to develop a climate change weekly feature to educate the public. Another participant expressed support for the addition of new municipal staff who would be responsible for

supporting sustainability and resiliency efforts at the local level, in addition to facilitating conversations between departments to break down siloes.

Report Out and Small Group Discussions

The following lists the projects and initiatives discussed during the report out/large group discussion as well as for each small group.

Large Group Discussion

Action	Location	Opportunities for collaboration
"Gray" or "Hard" Infrastructure Projects		
Address water supply needs		Yes
Utilities: redundancy, utilities that cross bridges have no alternative for rerouting		
"Green" Infrastructure		
Invest in barrier beach restoration	Essex, Gloucester, Ipswich	
Inventory natural resources on Cape Ann to assess current health, how they can be enhanced. Elevate resources that might be overlooked.		At Cape Ann scale, could share staff or consultants.
Better understanding and assessment of wetlands, their ability to move/migrate	Good Harbor Reach, Bass Ave behind S&S, Manchester, Raymond/Ocean St, Canomo Point	Maybe
Policies and Regulations		
Regularly convene planning staff and boards to share information and best practices related to planning for climate hazards and explore joint funding opportunities. • Facilitate conversations to break down siloed government departments through these new resilience staff.		Yes
Compile regional climate change resilience planning, zoning, policy, and regulatory resources that Cape Ann communities can refer to as needed.	Regional	Communities could share their best practices with one another, including public outreach information and implementation guidance.
Develop a collective climate policy vision for Cape Ann to inform needs in the region.	Regional	Developed with input from all communities

Action	Location	Opportunities for collaboration
Develop policies and regulations that facilitate the reduction of carbon emissions to mitigate sea level rise. • Net Zero • Carbon neutrality	Community by community	Communities could share ideas for model language and outreach materials.
Develop and/or find existing funding tools to assist communities in implementing priorities. • Local taxes to build trust fund for community projects	Community by community; regional	Communities could explore joint funding opportunities.
Public Awareness and Education Efforts		
Develop a general education campaign to raise awareness and share information about hazard exposure and the effect of climate change on people and infrastructure on Cape Ann. • Be mindful of language used • Not a top-down approach, start with residents to be more inclusive • Connect with the editor of the Gloucester Times to develop a climate change weekly feature to educate the public.		Yes
Continue to convene public information workshops and discussions like this that involve multiple communities		Yes
Find opportunities for a table-top exercise for emergency preparedness • For residents and municipal staff • Include utility providers • Increase awareness of evacuation routes, location of shelters, etc.		Yes

Small Group Discussions

Below combines ideas from all small groups.

Action	Location	Opportunities for collaboration
"Gray" or "Hard" Infrastructure Projects		
Elevate/raise coastal roadways and bridges.	Coastal roadways and bridges Route 127 Manchester • Route 128 @ Grant Circle • Route 133 Gloucester • Route 128 @ Lobsta Land • Thatcher Road @ Good Harbor Beach • Train bridge	
Evaluate vulnerabilities in utility systems and develop redundancies, especially related to electrical utility.		
Evaluate feasibility of short ferry service.	Route 128 @ Grant Circle Other bridges	
Develop strategies to address drinking water supply needs, including those related to mitigating saltwater intrusion and responding to drought conditions.	Drinking water reservoirs Groundwater	
Adapt infrastructure maintenance and improvement planning and activities to account for hazards; incorporate climate change projections.		
Continue to prioritize planning to mitigate impacts to the Gloucester WWTP (including relocation). • Investigate opportunities for investing in WWTP protection with sea level rise.	Gloucester	Demonstration project

Action	Location	Opportunities for collaboration
"Green" Infrastructure		
Restore wetlands, including those that have been filled. Consider wetland migration in restoration efforts.	Regional (including mosquito ditches) Gloucester • Wetlands @ Good Harbor Beach • Wetlands @ Thatcher Road • Wetlands @ Mill River Manchester • Wetlands @ Raymond and Ocean Streets Essex • Wetlands @ Conomo Point • Sarasota Marsh	
Remove or remediate tidal restrictions. Consider wetland migration in efforts.	Regional Gloucester • Bass Avenue @ Stop & shop Rockport • Long Beach seawall	
Pursue tree planting as part of natural habitat restoration and other green infrastructure projects.	Regional	
Maintain and enhance barrier beaches around Cape Ann.	Regional Ipswich • Cranes Beach Gloucester • Coffins Beach • Wingaersheek Beach	Multiple communities could be a part of this effort as these beaches protect several communities. Could also share resources for barrier beach protection (*i.e.,* share the same consultant to develop models for each of the beaches or have them develop a model that could be applied to all of the beaches)
Develop a comprehensive inventory of natural resources in Cape Ann, assess their current health, and determine opportunities for enhancement to aid with mitigation and adaptation.	Regional	Fund and develop this resource at the regional scale.

Action	Location	Opportunities for collaboration
Policies and Regulations		
Factor in drought considerations into planning and preparation	Regional	
In consideration of a community-wide managed retreat strategy, identify areas that could accommodate relocation and are less vulnerable to climate hazards.	Regional Gloucester Rockport	
Strengthen wetland protection regulations.		
Revise zoning and/or land development regulations to better adapt to projected climate impacts. • Evaluate possibilities for different incentives and mechanisms to encourage and/or require "smarter" development that seeks to locate away from climate hazards and mitigate vulnerabilities. • Stretch code building example • Evaluate possibilities to include hazard vulnerability information or assessments in the development projects. • Pursue changes that will better protect natural systems from development. • Explore possible zoning revisions in high hazard areas (e.g., FEMA Flood Hazard Areas) that will limit development and rebuilding post-hazard.		
Hire municipal sustainability/resilience staff.	Regional	Gloucester example
Regularly convene planning staff and boards to share information and best practices related to planning for climate hazards and explore joint funding opportunities.	Regional	
Public Awareness and Education Efforts		
Develop and install evacuation signage.	Regional	Coordinate regionally, as some communities have few egresses.
Develop a system to solicit and record local knowledge related to climate hazards.	Regional	

Action	Location	Opportunities for collaboration
Develop a general education campaign to raise awareness and share information about hazard exposure and the effect of climate change on people and infrastructure on Cape Ann. • Develop engagement strategies to connect to residents through existing community networks. • Include information about the benefits of natural systems.		
Host an "evacuation day" to raise awareness about emergency planning and response during natural hazards. • Run a table-top exercise for municipal officials and other emergency response entities simulating a natural hazard and evacuation scenario on Cape Ann. • Include resident-oriented events such as an evacuation drill and information about resources on Cape Ann (e.g., emergency shelters).	Regional	
Develop regional education and outreach toolkit that can be deployed after storm events so community members can direct their concerns into action.	Regional	Cape Ann should offer regular opportunities for the whole region to meet and exchange ideas regarding education and action opportunities (similar to this workshop series).

APPENDIX B

APPENDIX B: POTENTIAL FUNDING OPPORTUNITIES

Commonwealth of MA

Program Name	Funding Entity	Release/due dates (as available)	Description/Eligible Projects/Eligible Applicants/Funding Limit (if applicable)	Website
Drinking Water Supply Protection (DWSP) Grant Program	MA Department of Environmental Protection (MassDEP)	FY2022 Release: Generally early in calendar year Due date: 3/18/22	The DWSP grant program provides financial assistance for the purchase of land or interests in land for the following purposes: 1) protection of existing MassDEP-approved public drinking water supplies; 2) protection of planned future public drinking water supplies; or 3) groundwater recharge. It is a reimbursement program. Eligible projects: Purchase of land in fee, purchase of a Conservation Restriction, or purchase of a Watershed Preservation Restriction Eligible applicants: Municipalities, public water suppliers, and water/fire districts Funding limit: $300,000 and 50% reimbursement rate	https://www.mass.gov/service-details/drinking-water-supply-protection-grant-program
State Revolving Fund (SRF) Drinking Water Program	MassDEP	2023 Release: June 2022 Due date: August 2022	The SRF Drinking Water Program provides low-cost financing to help community public water suppliers comply with federal and state drinking water requirements. The program's goals are to protect public health and strengthen compliance with drinking water requirements, while addressing the Commonwealth's drinking water needs, through affordability and proper watershed management priorities. Eligible projects: Engineering, design, and construction of drinking water projects, such as new wastewater treatment facilities or replacement of contaminated sources that protect public health and improve compliance with federal and state drinking water regulations. Eligible applicants: Community public water suppliers Funding limit: MassDEP determines eligible costs of each project after reviewing the eligible borrower's loan application. The current subsidy level is provided via a 2% interest loan. The Program will operate with approximately $125-150 million in financing annually.	https://www.mass.gov/service-details/srf-drinking-water-program
SRF Clean Water Program	MassDEP	2023 Release: June 2022 Due date: August 2022	The SRF Clean Water Program provides a low-cost financing method to enable communities to meet water-quality standards. The program emphasizes watershed management priorities, stormwater management, and green infrastructure.	https://www.mass.gov/service-details/srf-clean-water-program

Program Name	Funding Entity	Release/due dates (as available)	Description/Eligible Projects/Eligible Applicants/Funding Limit (if applicable)	Website
			Eligible projects: Planning and construction of projects that provide water quality and public health benefits, such as CSO mitigation, nonpoint source pollution abatement projects, and wastewater collection systems. Green infrastructure planning projects for nonpoint source problems consistent with MassDEP's Nonpoint Source Management Plan are also eligible. Certain wastewater nutrient management projects may also be eligible. Eligible applicants: Municipalities Funding limit: MassDEP determines eligible costs of each project after reviewing the eligible borrower's loan application. The current subsidy level is provided via a 2% interest loan. The Program typically operates with $400-450 million in financing annually.	
Community Septic Management Program	MassDEP		The Program provides low-cost loans to allow communities to devise a Community Inspection Plan or a Local Septic Management Plan. Both plans must always include the provision of financial assistance to homeowners using betterment agreements. Eligible projects: Creation of a Community Inspection Plan (a plan to protect environmentally sensitive areas from contamination from septic systems) or Local Septic Management Plan (a plan that identifies, monitors, and addresses proper operation, maintenance, and upgrade of septic systems comprehensively). Eligible applicants: Municipalities	https://www.mass.gov/guides/the-community-septic-management-program
Section 319 Nonpoint Source Competitive Grants Program	MassDEP	Release: 10/13/2021 Due date: 12/15/2021	This grant program is authorized under Section 319 of the federal Clean Water Act for implementation projects that address the prevention, control, and abatement of nonpoint source (NPS) pollution. Eligible projects: • Implementation projects in impaired waters: The most competitive applicants will propose a watershed-based strategy to implement a combination of structural and non-structural Best Management Practices (BMPs) addressing all impairments and leading to restoration of impaired waters (Impaired waters are those listed in categories 4a, 4c, and 5 of the Massachusetts 2016 Integrated List of Waters. • Healthy Watersheds and Protection of High Quality Waters: Implementation projects for climate-change adaptation and resiliency and projects that protect non-impaired and high-quality waters from	https://www.mass.gov/info-details/grants-financial-assistance-watersheds-water-quality#section-319-nonpoint-source-competitive-grants-program-

Program Name	Funding Entity	Release/due dates (as available)	Description/Eligible Projects/Eligible Applicants/Funding Limit (if applicable)	Website
			the effects of nonpoint source pollution are eligible. This may include funding and support for a project with a substantial land conservation component as part of NPS prevention and remediation work. It might also include geomorphology and habitat improvement, and/or nutrient, sediment, and pathogen reduction in streams. • Outreach and Education: Outreach and education is often recommended as an effective nonstructural BMP. Successful projects in this category will propose specific outreach and education activities and products and will develop and implement an evaluation method to gauge the effectiveness of these activities. Projects should have regional or statewide relevance and should include a deliverable that can be made available in both print and electronic form, ensuring accessibility for disabled and non-English-speaking audiences if appropriate. Eligible applicants: Any Massachusetts public or private organization with projects in NPDES regulated areas (includes portions of Cape Ann). All other types of projects are eligible in regulated or mixed regulated/unregulated areas, provided the work proposed is not required under the current or pending NPDES stormwater permit. Funding limit: A 40% non-federal match of either funds and/or in-kind services is required.	
Community Development Block Grant (CDBG) Program, Community Development Fund (CDF)	MA Department of Housing and Economic Development	FY2022 Release: December 2022 Due date: March 2023	The CDF awards grants to communities to meet a broad range of community development needs in housing, infrastructure, revitalization, economic development, and public social services. It supports CDBG eligible activities. Eligible projects: Projects include but are not limited to housing rehabilitation or development, infrastructure, public social services, and community/public facilities. Eligible applicants: Municipalities with a population of under 50,000 that do not receive CDBG funds directly from the federal Department of Housing and Urban Development. Communities may apply on behalf of a specific developer or property owner. Communities may apply as individuals or jointly under one lead community. Funding limit: Approximately $24.4 million in financing will be available for FFY2022.	https://www.mass.gov/service-details/community-development-block-grant-cdbg

Program Name	Funding Entity	Release/due dates (as available)	Description/Eligible Projects/Eligible Applicants/Funding Limit (if applicable)	Website
Coastal Pollutant Remediation (CPR) Grant Program	MA Office of Coastal Zone Management (CZM)		The goal of the CPR program is to provide funding to municipalities to assess and treat stormwater pollution from impervious surfaces and to design and construct commercial boat waste pumpout facilities. Eligible projects: Recently funded projects include the design and construction of stormwater BMPs and nonpoint source pollutant assessments. Eligible applicants: Municipalities Funding limit: Approximately $180,000 in financing was made available to three grant recipients during the FY22 Fall award.	https://www.mass.gov/service-details/coastal-pollutant-remediation-cpr-grant-program
Coastal Habitat and Water Quality (CHWQ) Grants	MA CZM		The CHWQ program provides financial resources for projects that assess and treat stormwater impacts and support comprehensive habitat restoration planning activities. The CHWQ program has a broader scope than the CPR program. Eligible projects: Include but are not limited to efforts to assess, identify, and characterize nonpoint source pollution impacts from stormwater runoff to coastal waterbodies; design and construction of stormwater structural BMPs; capacity-building activities that support future implementation of green stormwater infrastructure; development of habitat restoration plans; and public outreach as a component of a larger project. Eligible applicants: Municipalities within the MA coastal watershed, certified 501(c)(3) nonprofit organizations, regional planning agencies, and stormwater collaboratives in partnership with municipalities.	https://www.mass.gov/service-details/coastal-habitat-and-water-quality-grants
Coastal Resilience Grant Program	MA CZM	FY2023 Release: 4/19/2022 Due date: 6/13/2022	The Coastal Resilience Grant Program provides financial and technical support for local and regional efforts to increase coastal resilience through planning, public outreach, feasibility assessment, and analysis of shoreline vulnerability to design, permitting, construction, and monitoring. Eligible projects: Projects should fall under one or more of the following categories. (1) Detailed Vulnerability and Risk Assessment. Projects that evaluate vulnerable public facilities and infrastructure. Assessments should build on the MVP Program and other assessments and set the stage for implementation of actions.	https://www.mass.gov/service-details/coastal-resilience-grant-program

Program Name	Funding Entity	Release/due dates (as available)	Description/Eligible Projects/Eligible Applicants/Funding Limit (if applicable)	Website
			(2) Public Outreach. Projects that increase community understanding of coastal storm and climate impacts and build effective partnerships to develop support for implementation of proactive climate adaptation actions. (3) Proactive Planning. Projects to develop, amend, and implement community-based resilience plans, local ordinances, bylaws, standards, zoning, and other planning tools or management measures to reduce the exposure of existing and future development and infrastructure to coastal storm damages and climate impacts. Projects that facilitate retreat of vulnerable development and infrastructure and reduce future development in hazardous areas are highly encouraged. (4) Redesigns and Retrofits. Engineering and construction projects that upgrade or adapt vulnerable public facilities and infrastructure to withstand flooding and erosion over the design life given higher tides, greater storm surges, and more intense precipitation. Projects that relocate public facilities and infrastructure outside of hazardous areas, where feasible, are strongly encouraged. (5) Shoreline Restoration. Projects that evaluate suitability, design, permit, construct, and/or monitor non-structural approaches that restore or enhance natural systems to provide erosion and flood protection services provided by public beaches, dunes, coastal banks, salt marshes, shellfish, and other habitat types. Projects must specifically address current erosion and flooding impacts of public facilities and infrastructure and be able to adapt as sea level rises. Eligible applicants: Municipalities within the MA coastal zone and certified 501(c)(3) nonprofit organizations that own vulnerable coastal property that is open and accessible to the public Funding limit: $2 million. Applicants encouraged to provide at least a 25% match (cash and/or in-kind contributions) but not required	
MA Land and Water Conservation Fund (LWCF)	MA Executive Office of Energy and Environmental Affairs (EEA)	Release date: October Due date: January	The Federal Land & Water Conservation Fund (LWCF) provides up to 50% of the total project cost for the acquisition, development, and renovation of parks, trails, and conservation areas. Eligible projects include: • Acquisition of parkland or conservation land • Creation of new parks • Renovations to existing parks • Development of trails	https://www.mass.gov/service-details/massachusetts-land-and-water-conservation-fund-grant-program

Program Name	Funding Entity	Release/due dates (as available)	Description/Eligible Projects/Eligible Applicants/Funding Limit (if applicable)	Website
			FY 22 focused on projects in areas of the Commonwealth that are considered to be urban heat islands with a high percentage of impervious surface or contribute to the conservation of resilient undeveloped land. Conservation project parcels of which 76-100% are designated as "Most Resilient" or "More Resilient" according to The Nature Conservancy's Resilience Mapping Tool or Recreation Project parcels that are mapped as being in the 3rd or 4th quartile of Summer Heat Island are eligible for a maximum of $1,000,000. All other applications will be eligible for a grant maximum of $750,000. Sample project ideas include turning vacant lots into community gardens and urban forests, planting many trees, removing significant amounts of pavement, or installing pergolas as a part of the park's renovation or development to provide more shade, and incorporating water spray parks as cooling features. Eligible applicants include: • Municipalities that have an up-to-date Open Space and Recreation Plan • Department of Conservation and Recreation • Department of Fish and Game • Massachusetts federally recognized tribes (Mashpee Wampanoag Tribe and Wampanoag Tribe of Gay Head - Aquinnah) Funding limits: LWCF funding is provided to the Commonwealth of Massachusetts by the NPS and is administered by EEA's Division of Conservation Services (DCS). For projects that will have a significant impact on climate resiliency, the maximum grant award is $1,000,000. The maximum grant award for all other project is $750,000. The minimum grant award is $50,000. EEA reserves the right to fund projects through sources other than LWCF should it so choose.	
Local Acquisitions for Natural Diversity (LAND)	MA EEA	Release date: March Due date: July	The LAND Grant Program is part of the Baker Administration's goal of protecting and enhancing outdoor recreation opportunities, conserving natural resources and open space, and addressing climate change. It is part of a longstanding tradition of protecting the Commonwealth's rich natural heritage for generations to come. The LAND Grant Program also supports the Governor Baker's Executive Order 569, which calls for state government to adapt to climate change and build a more resilient Commonwealth, by including resiliency criteria in its rating system and incorporating priority projects from EEA's Municipal Vulnerability Preparedness program.	https://www.mass.gov/service-details/local-acquisitions-for-natural-diversity-land-grant-program

Program Name	Funding Entity	Release/due dates (as available)	Description/Eligible Projects/Eligible Applicants/Funding Limit (if applicable)	Website
			Eligible Projects: Purchase of land in fee simple or a conservation restriction (CR). Landholdings that are in contiguous, under the same ownership, or proposed for acquisition for a single purpose may be packaged in the same application. Two or more municipalities may submit a joint application for contiguous lands within multiple municipalities. Unrelated, separate landholdings must be submitted as individual applications. Eligible Applicants: Open to municipal conservation and agriculture commissions. Municipalities must have an approved Open Space and Recreation Plan (OSRP), or have submitted a draft OSRP to EEA by the LAND Grant Program application deadline. Funding Limits: Maximum grant award is $400,000 per municipality unless increased at the discretion of the Secretary.	
Healthy Estuaries Grants	MA Bays National Estuary Partnership (MassBays)	The next round of funding will be available later in 2022.	The Healthy Estuaries Grant program provides small grants for projects that advance progress toward the goals of the Commonwealth's Comprehensive Conservation and Management Plan. Eligible projects: MassBays seeks proposals that will fill gaps in knowledge about our assessment areas, demonstrate new approaches to monitoring or protecting near-shore habitats, or lay the groundwork for future restoration. Eligible applicants: Municipalities, nonprofit organizations, and academic institutions	https://www.mass.gov/massbays-healthy-estuaries-grants
Emergency Management Performance Grant (EMPG)	MA Emergency Management Agency (MEMA)	Release: Due date: July	The EMPG program is a reimbursement-based grant program that supports efforts to build and sustain core capabilities across the prevention, protection, mitigation, response, and recovery mission areas. Funds may be used to support local and/or regional emergency management activities. Eligible projects: Emergency management activities in the following categories: Planning, Organizational, Equipment, Training, and Exercises. Eligible applicants: Local and tribal governments Funding limit: Reimbursement-based grant program with a required 1:1 match (cash and/or in-kind services)	https://www.mass.gov/info-details/emergency-management-performance-grant-empg#reimbursements-
Flood Mitigation Assistance (FMA)	MEMA	Release: 9/24/2021	FMA grants provide funds to assist in carrying out measures that reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes,	https://www.mass.gov/service-details/building-resilient-infrastructure-and-

Program Name	Funding Entity	Release/due dates (as available)	Description/Eligible Projects/Eligible Applicants/Funding Limit (if applicable)	Website
		Due date: 7/11/2022	and other structures insured under the National Flood Insurance Program (NFIP). Eligible projects: • Project Scoping to develop community flood mitigation projects and/or individual flood mitigation projects that will subsequently reduce flood claims against the NFIP. • Community Flood Mitigation Projects that address community flood risk for the purpose of reducing NFIP flood claim payments, such as flood control, drainage, etc. • Flood Hazard Mitigation Planning applications for the flood hazard component of State, Local, Territory, and Tribal (SLTT) Hazard Mitigation Plans and plan updates. • Individual Flood Mitigation Projects that mitigate the risk of flooding to individual NFIP insured structures, such as elevations and acquisitions. Eligible applicants: state agencies, local governments, and federally-recognized tribes; Individuals and businesses are not eligible to apply for HMA funds, however, an eligible applicant or sub-applicant may apply for funding on behalf of individuals and businesses. Funding limit: Cost share varies depending on the activity type and individual property's repetitive loss status	communities-bric-flood-mitigation-assistance-fma-grant-programs
Building Resilient Infrastructure and Communities (BRIC) Grant	MEMA	Release: 9/24/2021 Start date: 7/11/2022	BRIC grants support hazard mitigation projects that reduce the risks communities face from disasters and natural hazards. BRIC is a new FEMA pre-disaster hazard mitigation program that replaces the existing Pre-Disaster Mitigation (PDM) program. The BRIC program guiding principles are supporting communities through capability- and capacity-building; encouraging and enabling innovation; promoting partnerships; enabling large projects; maintaining flexibility; and providing consistency. FY 2021 includes a new priority to prioritize benefits to incentivize natural hazard risk reduction activities that mitigate risk to public infrastructure and includes disadvantaged communities as defined in the federal Executive Order 14008 – Tackling the Climate Crisis at Home and Abroad. Eligible projects: Proactive investment in community resilience and risk reduction from natural hazards; projects that demonstrate innovative approaches to partnerships, focus on infrastructure projects and Community	https://www.mass.gov/service-details/building-resilient-infrastructure-and-communities-bric-flood-mitigation-assistance-fma-grant-programs

Program Name	Funding Entity	Release/due dates (as available)	Description/Eligible Projects/Eligible Applicants/Funding Limit (if applicable)	Website
			Lifelines, and invest in project scoping and building capacity. Project can include project scoping/building code/partnerships/planning-related activities. Sub-applicants may use this funding to help design, scope, and develop eligible and complete applications. This includes development of a feasible project budget, survey, design, alternatives analyses, community outreach, etc. Eligible applicants: State agencies, local governments, federally recognized tribes; applicants must have a FEMA-approved mitigation plan Funding limits: Up to $50 million is available at a 75% cost share per eligible activity	
Citizen Corps Program (CCP) Grant	MEMA	Release: Due date: July	The CCP is a reimbursement-based grant program that assists local and regional Community Emergency Response Teams (CERTS) organizations in preparing for threats and hazards and obtaining the resources and capabilities required to support the National Preparedness Goal's Mission Areas and Core Capabilities. Eligible projects: Includes but not limited to local/regional mass care capabilities/sheltering, CERT member safety gear, training and exercises for CERT members, and community outreach/public education. Eligible applicants: Local and regional CERTs Funding limits: $5,000 for a single community CERT and $10,000 for a regional (two or more) CERT.	https://www.mass.gov/info-details/citizen-corps-program-ccp-grant
Restoration Priority Projects program	MA Division of Ecological Restoration (DER)		The Priority Projects program selects proactive and voluntary ecological restoration projects that benefit the Commonwealth and align with DER's goals of restoring and protecting rivers, wetlands, and watersheds for the benefit of people and the environment. Priority Projects can be in any stage of development. The type and level of assistance (e.g., technical, financial) is based on individual project needs and funding availability. Eligible projects: Must fall into at least one of the following categories: (1) Cranberry Bog Wetland Restoration. Projects to rejuvenate historical wetlands and streams on abandoned or retired cranberry farmland. (2) Dam Removal and River Restoration. Actions that remove a human-made barrier(s) from a river or stream. (3) Coastal Wetland Restoration. Actions that restore the ecological functions of coastal wetlands, which have been significantly impacted by	https://www.mass.gov/how-to/become-a-der-priority-project

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			anthropogenic activities (historic fill, channelization, diversions, undersized crossings, hydrologic modification, barriers to inland marsh migration, etc.). Eligible applicants: Private site landowners, nonprofit and/or non-governmental organizations, regional planning organizations, municipalities, and state and federal agencies. Funding limit: Varies by available funding each year. The value of technical services or funding for individual projects has ranged from about $10,000-$70,000 annually.	
EmPower Massachusetts Innovation and Capacity-Building Grants	Massachusetts Clean Energy Center (MassCEC)		EmPower is a program aimed at the exploration, development, and implementation of innovative program models or projects that will provide access to the benefits of clean energy or reduce energy burden for previously underserved or vulnerable populations. This grant funds activities to develop innovative program models or projects. Eligible projects: Activities related to the exploration, development, or refinement of innovative ideas for potential program models or projects; or building organizational capacity to conduct community-based programs or projects. Eligible applicants: Community-based organizations (CBOs) or individuals, public entities, and for-profit entities. All applicants other than CBOs must partner with a CBO to be eligible. Funding limit: $5,000-$25,000	https://www.masscec.com/program/empower-massachusetts
EmPower Massachusetts Implementation Grant	MassCEC		EmPower is a program aimed at the exploration, development, and implementation of innovative program models or projects that will provide access to the benefits of clean energy or reduce energy burden for previously underserved or vulnerable populations. This grant funds implementation of innovative program models or projects. Eligible projects: Place-based or network-based programs or projects that increase access to the benefits of clean energy and/or reduce energy burden to underserved or vulnerable populations and are ready for implementation. Eligible applicants: Community-based organizations (CBOs) or individuals, public entities, and for-profit entities. All applicants other than CBOs must partner with a CBO to be eligible.	https://www.masscec.com/program/empower-massachusetts

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			Funding limit: $5,000-$25,000	
Action Grants	Municipal Vulnerability Preparedness (MVP) Program	Next round 2023	The MVP Action Grant offers financial resources to municipalities that are seeking to advance priority climate adaptation actions to address climate change impacts resulting from extreme weather, sea level rise, inland and coastal flooding, severe heat, and other climate impacts. Eligible projects: priorities identified during Eligible applicants: Communities who complete the MVP program become certified as an MVP community and are eligible for MVP Action Grant funding and other opportunities. Finding limit: The municipality is required to match 25% of total project cost using cash or in-kind contributions (see RFR for exceptions).	

Federal and Nonprofit

Program Name	Funding Entity	Release/due dates (as available)	Description/Eligible Projects/Eligible Applicants/Funding Limit (if applicable)	Website
Accelerating Climate Resiliency Grant Program	Metropolitan Area Planning Council (MAPC)	FY 2022 to be announced	MAPC is working in partnership with the Barr Foundation to accelerate climate resilience in the region by helping municipalities advance strategies that protect people, places, and communities from the impacts of climate change. The intent is to fund actionable resilience interventions that facilitate long-term, innovative changes leading to greater readiness for climate change. In particular, MAPC seeks to elevate projects that will advance climate equity, regional coordination, and social cohesion. Program Priorities • Nature-based solutions for climate resilience • Municipal climate resiliency policy • Innovative financing or infrastructure investment program models • Climate coalitions or convenings • Contributions to social resiliency or cohesion • Projects that combine climate adaptation with climate mitigation • Local food system or agricultural resiliency measures	https://www.mapc.org/resource-library/accelerating-resiliency/

Program Name	Funding Entity	Release/due dates (as available)	Description/Eligible Projects/Eligible Applicants/Funding Limit (if applicable)	Website
			• District-scale climate resiliency pilots • Public outreach, marketing, and artistic, cultural, or creative projects Funding limits: FY2021: Twelve grantees received funding for their climate resiliency projects for a total of over $400,000. Eligible applicants: the lead municipality must have a representative appointed to the Council.	
Technical Assistance Program	MAPC		MAPC sees its Technical Assistance Program (TAP) as a means to help cities, towns, and the Commonwealth to implement local, regional, and state goals. Generally speaking, it gives preference to projects that advance the regional land use and policy plan, MetroCommon 2050, and the planning priorities identified in the agency's current Strategic Plan. We also give preference to projects that align with the state priorities. Each TAP solicitation includes priorities for that particular year. Eligible projects cover a wide variety of topics, including but not limited to: • Housing production and preservation, especially in regard to affordable housing; • Economic development, including economic recovery from the impacts of the COVID-19 recession; • Regionalization and shared services; • Municipal effectiveness and efficiency, including municipal IT; • Public engagement in planning and municipal governance; • Improving public safety and public safety practices; • Public health, including response to COVID-19; • Climate change (mitigation or adaptation/resilience); • Clean energy and reducing the carbon footprint; • Fair housing; equitable transit-oriented development (E-TOD); • Bicycle/pedestrian mobility; • Environmental and resource protection; • Creative community placemaking; • Arts and culture planning; • Projects to improve equity and inclusion in the region; and • Research-based proposals or the development of best practices. Eligible applicants: the lead municipality must have a representative appointed to the Council.	https://www.mapc.org/planning101/funding-opportunity-mapcs-technical-assistance-program/

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Community-Based Restoration Program - Coastal and Marine Habitat Restoration Grants	National Oceanic and Atmospheric Administration (NOAA)	Release: 11/8/2019 Due date: 4/20/2020	NOAA's Restoration Center recognizes that habitat protection and restoration are essential elements of a strategy for sustainable commercial and recreational fisheries. Investing in habitat restoration projects leads to real, lasting differences for communities, businesses, and the environment. The Community-based Restoration Program supports restoration projects that use a habitat-based approach to rebuild productive and sustainable fisheries, contribute to the recovery and conservation of protected resources, promote healthy ecosystems, and yield community and economic benefits. Eligible projects: Restoration includes activities that return degraded or altered marine, estuarine, coastal, and freshwater, migratory fish habitats to functioning conditions, and techniques that return NOAA trust species to their historic habitats, such as living shoreline and marsh restoration. Feasibility, design, and implementation projects are all eligible. Eligible applicants: Institutions of higher education, non-profit organizations, for-profit organizations, and state, territory, local, and Indian tribal governments Funding limits: Award amounts range from $75,000 to $3 million over one to three years.	https://www.fisheries.noaa.gov/grant/coastal-and-marine-habitat-restoration-grants
Environmental Literacy Program	NOAA Office of Education	Release date: Due date: 3/17/2022	To fund projects that develop collective environmental literacy to enhance community resilience to climate change. There is a particular emphasis on supporting diversity, equity, inclusion, and climate justice in all aspects of each project. Eligible projects: NOAA will consider funding a wide range of project types, but all projects must support the goal of this funding opportunity, which is for communities to have sufficient collective environmental literacy to take actions that build resilience to extreme weather and climate change in ways that contribute to community health, social cohesion, and socio-economic equity. These communities are composed of children, youth, and adults who participate in formal and informal education experiences that develop their knowledge, skills, and confidence to: 1) reason about the ways that human and natural systems interact globally and locally, including the acknowledgement of disproportionately distributed vulnerabilities; 2) participate in civic processes; and 3) incorporate scientific information, cultural knowledge, and diverse community values in decision making. Projects should leverage and incorporate relevant resilience plans and collaborate with individuals and institutions that	https://www.noaa.gov/office-education/elp/grants

Program Name	Funding Entity	Release/due dates (as available)	Description/Eligible Projects/Eligible Applicants/Funding Limit (if applicable)	Website
			are involved in efforts to develop or implement those plans. Projects should engage participants in active and social learning activities. Eligible applicants: • Institutions of higher education; • K-12 public and independent schools and school systems; • Other nonprofits, including community-based organizations and informal education institutions, such as museums, zoos, and aquariums; • State and local government agencies; and • Indian tribal governments in the United States. Funding limits: The total federal amount requested from NOAA for each project must be no less than $250,000 and no more than $500,000 for all years of the project, including direct and indirect costs.	
Five Star and Urban Waters Restoration Grants	National Fish and Wildlife Federation (NFWF) (nonprofit)	Varies	The Five Star and Urban Waters Restoration Program seeks to develop community capacity to sustain local natural resources for future generations by providing modest financial assistance to diverse local partnerships for wetland, forest, riparian and coastal habitat restoration, stormwater management, outreach and stewardship with a particular focus on water quality, watersheds and the habitats they support. Funding priorities for this program include: • On-the-ground wetland, riparian, in-stream and/or coastal habitat restoration • Meaningful education and training activities, either through community outreach, participation and/or integration with K-12 environmental curriculum • Measurable ecological, educational and community benefits • Partnerships: Five Star projects should engage a diverse group of community partners to achieve ecological and educational outcomes. Eligible projects: wetland, riparian, in-stream and/or coastal habitat restoration; design and construction of green infrastructure BMPs; water quality monitoring/assessment; outreach and education. Eligible applicants: Federal, state, and local governments, educational institutions and nonprofit organizations are welcome to apply for matching grants from NFWF conservation priority programs.	https://www.nfwf.org/programs/five-star-and-urban-waters-restoration-grant-program

Program Name	Funding Entity	Release/due dates (as available)	Description/Eligible Projects/Eligible Applicants/Funding Limit (if applicable)	Website
			Funding limits: Award matching grants to applicants receiving funds from federal agencies such as USFWS, BLM, NOAA, EPA, and USDA-Forest Service.	
National Coastal Resilience Fund	NFWF		Coastal communities and resilience practitioners are increasingly using natural and nature-based solutions to protect shorelines, improve ecosystem function, and adapt to a changing climate. NFWF grantees have successfully implemented nature-based projects in urban waterfronts, rural coasts, critical ports, and other sites using the following strategies. • Adaptive Management: A science-based process that can help practitioners manage project uncertainties and reduce risk in the face of changing environmental, social, and political conditions. • Partnerships: Successful resilience projects require a wide range of knowledge and capacity and therefore forming partnerships with many groups involved in the field can help resilience practitioners work collectively to overcome challenges. • Outreach and Engagement: Accessible and inclusive outreach and engagement strategies can help ensure that communities understand a project's benefits and have a voice in project design and implementation. Eligible applicants: Federal, state, and local governments, educational institutions and nonprofit organizations are welcome to apply for matching grants from NFWF conservation priority programs. Funding limits: Award matching grants to applicants receiving funds from federal agencies such as USFWS, BLM, NOAA, EPA, and USDA-Forest Service.	https://www.nfwf.org/programs/national-coastal-resilience-fund
Climate Catalyst Program	Open Space Institute in partnership with the Land Trust Alliance	Release date: Due date: 6/8/2022	OSI's Catalyst Program currently focuses on addressing the following climate issues: habitat resilience, forest carbon storage, and sequestration, and community resilience to climate impacts such as flooding. It supports conservation groups and communities by offering planning grants and technical assistance, authoring guidance documents, and hosting workshops. Eligible projects: integration of climate science into strategic land protection plans or forest stewardship plans Eligible applicants: Land trusts, not-for-profit organizations, and state and federally recognized Tribes	https://www.openspaceinstitute.org/climate-catalyst-program

Program Name	Funding Entity	Release/due dates (as available)	Description/Eligible Projects/Eligible Applicants/Funding Limit (if applicable)	Website
			Funding limits: $300,000 in funding was available in the 2022 grant round; Land trusts may also apply for strategic conservation planning or communications technical support from the Land Trust Alliance. Qualified applicants can apply for grants between $5,000 - $15,000 and/or for one-on-one technical support. All projects must begin in 2022 and be completed within twelve months.	
Mini Grant	Partners for Places/The Funders Network	Release date: 7/21/2022 Due date: 9/15/2022	Partners for Places aims to enhance local capacity to build equitable and sustainable communities in the United States and Canada. These one-to-one matching awards support the planning and implementing of urban sustainability and green stormwater infrastructure projects. Eligible projects: supports the building of collaborative partnerships between a local government sustainability and/or water department(s), frontline community group(s), and place-based funder(s), so that these groups can connect and align to produce work that advances equitable sustainable climate action and/or green stormwater infrastructure (GSI) projects. Hiring an expert to facilitate the integration of equity principles into the partnership's processes must be included in the budget. Examples of other activities that can be funded include: (1) hiring a water and/or sustainability expert for coaching on process planning and/or project design; (2) planning, hosting, and facilitating a convening for local government leaders, frontline community group(s), and place-based funders; and/or (3) hiring support to help draft a full application to P4P, if it is determined beneficial to apply. Eligible applicants: A mini grant application should include: (1) a frontline community group; (2) a local government sustainability and/or water director; and (3) a place-based funder. P4P defines: (1) a frontline community as those experiencing the most immediate and worst impacts of climate change; and (2) frontline community groups as those whose primary mission is to represent and serve these people, improving living situations by addressing the root causes of oppression and injustice, economic disadvantage, and environmental harm. Funding limits: The grant program provides partnership investments between $25,000 and $75,000 for one-year projects, or between $50,000 and $150,000 for two-year projects, with a 1:1 match required by one or more local foundations.	https://www.fundersnetwork.org/partners-for-places/#opportunities
Climate Adaptation Fund	Wildlife Conservation Society	Release date:	The WCS Climate Adaptation Fund will provide up to $2.5 million in competitive grants in 2022. Awards will be made to non-profit conservation organizations applying for one of two grant categories:	https://www.wcsclimateadaptationfund.org/

Program Name	Funding Entity	Release/due dates (as available)	Description/Eligible Projects/Eligible Applicants/Funding Limit (if applicable)	Website
		Due date: 4/8/2022	Adaptation Implementation projects that apply innovative approaches to conservation actions designed to help wildlife and ecosystems adapt to climate change. These projects must include a monitoring plan to inform adaptive management decisions and evaluate progress towards project outcomes. These grants will be up to $300,000 over 3 years. Adaptation Mainstreaming projects that work to facilitate the conditions necessary to increase the uptake of an adaptation approach with known benefits. These grants will be up to $100,000 for 2 years. Eligible applicants: • U.S.-based non-profit conservation organizations with approved IRS 501(c)(3) status. U.S.-based non-profit conservation organizations without an approved IRS 501(c)(3) status may apply through a 501(c)(3) organization as a fiscal sponsor. • Organizations proposing adaptation projects within the 50 U.S. states, Commonwealths, and territories. • Organizations proposing adaptation projects in terrestrial, inland aquatic, or coastal aquatic systems. The WCS Climate Adaptation Fund is unable to make grants to for-profit corporations, individuals, universities, public agencies, municipalities, or other types of government entities. However, it encourages and expects that many projects will be implemented in collaborative partnership between the leading non-profit organization and a diverse array of natural resource practitioners.	
Hurricane and Storm Damage Reduction Projects (Sect 103)	U.S. Army Corps of Engineers (USACE)	Open enrollment	Section 103 of the 1962 River and Harbor Act authorizes the Corps of Engineers to study, design, and construct small coastal storm damage reduction projects in partnership with non-Federal government agencies, such as cities, counties, special authorities, or units of state government. Hurricane and storm damage reduction projects are not limited to any particular type of improvement. Beach nourishment (structural) and floodproofing (non-structural) are examples of storm damage reduction projects constructed utilizing the Section 103 authority. Eligible projects: feasibility studies; final design (plans and specifications) and construction	https://www.nae.usace.army.mil/Missions/Public-Services/Continuing-Authorities-Program/Section-103/

Program Name	Funding Entity	Release/due dates (as available)	Description/Eligible Projects/Eligible Applicants/Funding Limit (if applicable)	Website
			Eligible applicants: non-federal government agencies, such as cities, counties, special authorities, or units of state government Funding limits: The Feasibility Study is 100% federally funded up to $100,000. Costs over $100,000 are shared equally with the non-federal sponsor (50/50). Up to one-half of the non-federal share can be in the form of in-kind services. Costs for preparation of plans and specifications and construction are shared at 65% federal/35% non-federal. The non-federal share of construction consists of provision of any necessary lands, easements, rights-of-way, relocations, and disposal areas (LERRD), plus a cash contribution of 5% of the total project costs. In the event that the value of LERRD, plus 5% cash, does not equal at least 35% of the total project cost, the non-federal sponsor must contribute additional cash to equal 35%.	
Regional Catastrophic Preparedness Grant Program – Region 1	Federal Emergency Management Agency (FEMA)	Release date: 6/27/2022 Due date: 7/29/2022	Provides funding to close known capability gaps, encourage innovative regional solutions to issues related to catastrophic incidents, and build on existing regional preparedness efforts. The purpose of the RCPGP is to build regional capacity to manage catastrophic incidents by improving and expanding collaboration for catastrophic incident preparedness. Eligible projects: develop and deliver one planning project that addresses specific capability gaps based on Threat Hazard Identification and Risk Assessment/Stakeholder Preparedness Review (THIRA/SPR) results and focuses on housing, community resilience, and long-term vulnerability reduction, with an emphasis on disadvantaged communities, within the strategic priorities of equity, climate resilience, and readiness. Applicants are encouraged to develop projects that build a continuous cycle of planning, organizing, training, and exercising with regional partners across the whole community to improve their collective readiness posture. Examples of allowable activities for Community Resilience: • Partner with local community leaders, emergency managers, and other key stakeholders to develop localized, risk-informed mitigation plans. • Develop a unified, regional mitigation plan that addresses the needs of disadvantaged communities and other socially vulnerable populations and supports the local community mitigation plans. Develop a plan to provide necessary outreach and training to leaders and other key stakeholders representing disadvantaged communities to enable and empower individuals and communities to make informed decisions to facilitate actions necessary to adapt to, withstand, and quickly recover from disasters.	https://www.fema.gov/grants/preparedness/regional-catastrophic https://www.fema.gov/grants/preparedness/regional-catastrophic/fy-22-nofo#program

Program Name	Funding Entity	Release/due dates (as available)	Description/Eligible Projects/Eligible Applicants/Funding Limit (if applicable)	Website
			• Conduct outreach and training with local community leaders and partners to identify at-risk, disadvantaged communities, analyze their risks, capabilities, and needs, and address those needs as part of a broader planning project that aims to improve community-level resilience. • Partner with local community leaders, emergency managers and other key stakeholders to exercise emergency operations plans to identify gaps in preparedness capabilities that affect the resilience of disadvantaged communities. Eligible applicants: States, territories, and local governments Funding limits: $1 million cap; no mandatory cost share requirement	