

Maine PDF 2: Project Narrative
NOAA Climate Resilience Regional Challenge (2023)
Resilient Maine: Local Adaptation and Resilience Actions at a Coastwide Scale

BACKGROUND

Maine’s proposal for the NOAA Climate Resilience Regional Challenge (CRRC) will leverage our record of climate leadership and the momentum behind the state’s climate action plan, *Maine Won’t Wait*¹, to address serious climate risks and vulnerabilities and accelerate urgent climate resilience planning and investments. Relentless warming trends on land and at sea are causing more frequent and intense storms, rising seas, flooding, and drought, all of which threaten Maine’s people, environment, heritage industries, and our communities and economy. The dangers of unchecked climate effects became apparent in Maine over the past six weeks, as a series of storm disaster events caused millions of dollars in damage and claimed four lives. These storms have raised alarms about the dangerous climate risks facing our state, and the immediate need to plan for and invest in climate resilience at the state, regional, and local levels.

In December 2023 and January 2024, three historically severe storms resulted in catastrophic inland flooding (December 18, 2023) and coastal flooding (January 9 and 13, 2024) that caused unprecedented devastation to infrastructure and communities across the state. Governor Mills requested Federal disaster declarations for all three storms, which were the latest in a series of disaster-level weather events over the past year – including an unprecedented six storms from December 2022 to December 2023.

On December 18, heavy rainfall, rapid snowmelt, partially frozen ground, and pre-saturated soils all resulted in catastrophic flooding across three of Maine’s largest river systems, the Kennebec River, the Androscoggin River, and the Saco River. Over a dozen river gauges reached major and/or record flood levels following heavy rain and snowmelt, resulting in the need for two municipalities to perform emergency evacuations. Flooded rivers caused the closing of more than 100 roads at peak, stranding people and communities and preventing emergency responders and power recovery crews from accessing hard hit areas for days. Furthermore, widespread prolonged and damaging winds ranging between 45-80mph resulted in extensive downed trees and power lines, leaving over 440,000 households without power for several days. The storm claimed the lives of four people, including two whose vehicle was swept away by floodwaters. State officials estimate an excess of \$20 million in damages across ten of Maine’s 16 counties. Some of the hardest hit areas are rural communities with limited fiscal, staff, and community capacity for guiding recovery and includes counties that have been sites of prior declared disasters over the past year alone.

The January 9 storm caused significant flooding and infrastructure damage along the Maine coast, including locations where heavy wind, rain and flooding destroyed homes, buildings, and roadways, damaged lighthouses, and devastated docks, wharves and piers serving Maine’s iconic and vital working waterfronts. With natural and manmade coastal protections severely weakened, on January 13, the state experienced a second coastal storm and a record high storm tide that further damaged coastal homes, businesses, beaches, and waterfronts. Initial public infrastructure damage estimates from these storms are \$48 million, far surpassing those incurred from the December storm.

Coastal storms and extreme inland precipitation over the past two years in Maine have exposed the significant vulnerability of our infrastructure and communities to the effects of climate change. These events have demonstrated an urgent need to provide information and decision support tools to help Maine communities prepare for and recover from climate change impacts including accelerated sea level rise, inland flooding, and increased frequency and intensity of storms. With 3,500 miles of tidal coastline, Maine’s is the fourth longest coast in the continental U.S. Most of the state’s population lives in the

¹ https://www.maine.gov/climateplan/sites/maine.gov.climateplan/files/inline-files/MaineWontWait_December2020_printable_12.1.20.pdf

Coastal Zone. The Maine coast is an economic engine for the state, attracting millions of visitors annually and supporting working waterfronts for the state's important fishing, lobstering and aquaculture industries, shipbuilding, and related marine businesses. Maine's coastal areas also feature unique tidal flats and low and high salt marshes, which are critical habitats for endangered species, shorebirds, and commercially harvested species. Salt marshes in Maine currently store significant amounts of carbon but are threatened by rising sea levels. Maine's central and western mountain areas have also been hit with intense storms that have caused serious infrastructure and economic damage to natural resource-based industries and key tourism sectors, such as outdoor recreation.

Relentless warming trends on land and at sea drive extreme storms, rising seas, flooding, and drought, all of which threaten our environment, heritage industries, and the future of our communities and economy. Maine's coastal and inland communities currently face numerous climate threats and challenges:

- *Accelerated sea level rise:* The rate of sea level rise continues to accelerate in Maine, and record-high monthly mean sea levels were recorded for seven months in 2023. Between January and December 2023, the record for highest monthly mean water level was broken at all long-term gauges for 6-7 months, with mean water levels between 6 and 10 inches higher than the long-term averages for those months². A "Cost of Doing Nothing" analysis in 2020 for the Maine Climate Council (MCC) found that sea level rise by 2050 threatens more than 21,000 coastal jobs in tourism, fishing, and real estate, which is equivalent to 3% of Maine's workforce.
- *Inland flooding:* Inland flooding endangers people as well as transportation, water, and other community infrastructure. In the next 30 years, approximately 2,300 inland road culverts have a two-in-three chance of overtopping.
- *Coastal geography:* Approximately 40% of Maine's coast is made up of unconsolidated, erodible bluffs. These areas have seen large amounts of development over the past few decades, and an increasing percentage of them have been stabilized by traditional shoreline engineering methods such as installing riprap. Although this technique may protect property in the short term, it can exacerbate erosion on neighboring properties, and over time, can result in loss of protected resources such as marshes and mudflats due to storms and sea level rise.
- *Increased frequency and intensity of storm events:* Within the last 24 months, Maine has received a total of six disaster declarations and one emergency declaration – a stark increase over the preceding decade in which Maine experienced an average of one disaster declaration every two years.
 - March 15, 2022, DR-4647 (3 counties) was declared for a severe storm and flood event.
 - March 22, 2023, DR-4696 (6 counties) was declared for a severe storm and flood event.
 - July 26, 2023, DR-4719 (8 counties) was declared for a severe storm and flood event.
 - September 5, 2023, DR-4736 was declared for a severe storm and flood event in Franklin County.
 - September 6, 2023, DR-4737 was declared for a severe storm and flood event in Oxford County.
 - An Emergency Declaration, EM-3598-ME, was declared on September 14, 2023, in advance of Hurricane Lee.
 - December 18, 2023, DR-4754 (9 counties) was declared for a severe storm and flood events.
 - January 10 and 13, 2024, Maine Emergency Management Agency (MEMA) initiated the Major Disaster Declaration and damage assessment process.

The activities proposed in Maine's NOAA Climate Resilience Regional Challenge Application address urgent climate risks and vulnerabilities in communities within the Coastal Zone and the state's riverine watersheds, leveraging Maine's climate leadership and the momentum behind *Maine Won't Wait (MWW)* and accelerating Maine's climate resilience planning and investments.

Governor Mills has made nationally recognized commitments to tackling climate change, advancing clean energy, and improving the climate resilience of Maine's nearly 500 municipalities and Tribal

² Maine Climate Council Science and Technology Subcommittee

governments. The Governor’s Office of Policy Innovation and the Future (GOPIF) was established by Governor Mills to foster collaboration and innovative solutions to help solve Maine’s most important long-term challenges. GOPIF coordinates the work of the MCC, established in law in 2019. The MCC is an assembly of scientists, industry leaders, engaged citizens, bipartisan local and state agency officials, legislators, and leadership from the Maine Department of Environmental Protection (DEP), the Maine Department of Marine Resources (DMR), the Maine Department of Agriculture, Conservation and Forestry (DACF), the Maine Department of Inland Fisheries and Wildlife (DIFW), the Maine Department of Transportation (MaineDOT), the Maine Department of Economic and Community Development (DECD), and the Maine Emergency Management Agency (MEMA).

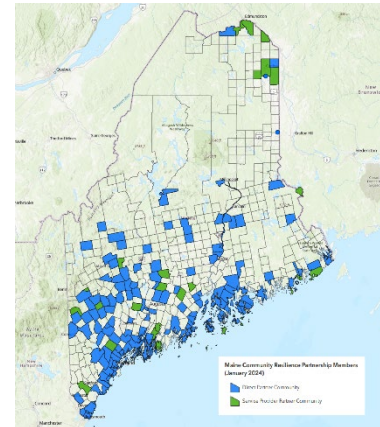


Figure 1. Project area map including all municipalities in Maine. A larger map is in the supplemental materials.

On December 1, 2020, Governor Mills welcomed *MWW* from the MCC. *MWW* made recommendations to better prepare Maine communities and people to withstand accelerating climate change impacts, especially our most vulnerable citizens and communities including increasing assistance and funding for community resilience and investing in climate ready infrastructure. The plan highlights the importance of equity as we consider new programs and allocation of resources and addresses Maine’s unique challenges as a highly rural state, with thousands of miles of coastline, the oldest population by median age in the country, and the most heating-oil dependent state in the nation with nearly 6 in 10 homes reliant on oil or kerosene for heat. Of *MWW*’s eight overall strategies, *Resilient Maine* builds on five strategies that enhance climate resilience: D – Grow Maine’s Clean Energy Economy and Good Jobs, E – Protect Maine’s Environment and Working Lands and Waters, F – Build Healthy and Resilient Communities, G – Invest in Climate-Ready Infrastructure, and H – Engage People and Communities in Climate Impacts and Program Opportunities.

Coastal storms and extreme inland precipitation experienced over the past two years have exposed the vulnerability of infrastructure and communities to climate impacts. As recent storms and flooding events have demonstrated, there is an urgent need to provide information and decision-support tools to help Maine communities prepare for and recover from climate change impacts. Maine is a coastal state with hundreds of miles of historically significant rivers that today provide ecological and recreational connectivity between coastal and inland communities. In today’s changing climate, linkages spanning entire watersheds have implications for community flood resilience, restoring sea-run fisheries, and improving water quality. Maine’s coastal and inland communities face a range of resilience and adaptation challenges to sufficiently address these vulnerabilities including:

Limited local capacity

- Maine is home to many small, rural towns with few paid staff and low populations.
- Municipalities rely heavily on volunteers to staff planning boards, climate action committees, public safety services, conservation commissions, and more.
- Over 70% of Maine communities lack paid planning staff.
- Under-resourced communities need access to additional tools, training, and capacity to implement adaptation and resilience projects.
- Many towns are not ready for upcoming federal investments in infrastructure and disaster recovery and may miss out on those opportunities.

Outdated decision-making tools and models

- Maps of Maine’s unconsolidated bluff shorelines are more than 20 years old. These maps are used to regulate coastal development under the Shoreland Zoning Act.

- During the recent coastal storms, some towns noted that their planned infrastructure upgrades would not have been sufficient to withstand the storm surge experienced. Planning for future infrastructure upgrades will require tools and models that accurately reflect the latest sea level rise and storm surge projections.
- Saltwater intrusion into drinking water wells is an emerging phenomenon along the Maine coast and a top concern for many coastal communities. However, most reports are anecdotal, and the extent and scope of the problem are not known. About 40% of Maine's citizens use a private groundwater well for their household water supply. Municipalities and state agencies need more information about what features encourage or protect against saltwater intrusion.
- Flood risk maps are out of date or do not exist for much of the state. Vulnerabilities such as flood-prone low-lying roads, undersized stream crossings, and structures adjacent to floodplains are difficult for communities to assess comprehensively. Models and technical assistance specific to inland flooding risks are lacking. Communities need resources that draw a clear connection between recognized flood vulnerabilities and adaptation strategies.
- There are currently a series of impediments to the widespread use of living shorelines to abate shoreline erosion along the bluffed coast in Maine. Both public and private landowners want to invest in shoreline measures that buy them lasting protection, are easily permitted, are affordable and proven, and require less maintenance. However, examples of nature-based approaches to bluff erosion are not prevalent and engineering and construction experience with living shorelines is minimal.

Maine recognizes that the budget for *Resilient Maine* is significant. Our proposed efforts are comprehensive in their approach to helping Maine's coastal and riverine watershed communities reduce the risk of climate impacts and rebuild from flooding and severe storm events with resiliency. This project leverages significant existing state and federal climate resilience programs and investments including:

Emphasis on Equity: *MWW* emphasizes the need to advance equity through the state's climate response. The effects of climate change will create significant hardships for disadvantaged people and communities, such as low-income residents, older adults, indigenous people, people of color, and others, who are less able to respond. LD 1679, which established the MCC, set equity as a core objective, naming low-to-moderate income households, rural and economically distressed communities, workers, and businesses as "priority populations" for climate action, either because of their vulnerability to climate change impacts, limited resources or capacity to respond and adapt, or because of intersections between these vulnerabilities. Accordingly, *MWW* contains numerous directives to consider, serve, and invest in priority populations and vulnerable communities. In addition, Maine has established a working group to ensure that federally-funded climate action activities comply with Justice40, the federal requirement that 40% of program investments in environmental, climate, hazard mitigation, and clean energy programs flow to disadvantaged communities.

Municipal and Tribal Assistance: GOPIF leads the Community Resilience Partnership (CRP), a new state program that incentivizes municipalities and tribal communities to identify climate and resilience priorities and start or expand climate planning and actions. A recommendation of *MWW*, the CRP was launched by Governor Mills in December 2021 with an initial goal of assisting 100 communities in its first year. To date, 174 municipalities and tribal communities are now participating in the CRP, and the program has awarded \$6.1 million in grants for 103 climate resilience and clean energy initiatives in communities statewide.

The CRP uses the Maine Social Vulnerability Index (SVI) as one tool to identify socially vulnerable populations. The SVI is based on 17 socioeconomic and demographic indicators taken from U.S. Census data. Communities that the tool identifies as Socially Vulnerable have combinations of those 17 indicators which may increase their vulnerability in the event of an emergency and reduce their ability to prepare for and recover from disruptions. The SVI is a tool that can be used to help inform planning processes, allocation of resources, and policy and program development by bringing the elements of social

vulnerability into the calculus. Through the CRP, communities with elevated social vulnerability, as well as communities with smaller population sizes, receive certain considerations that aim to level the grant making playing field. In 2022, 57% of CRP grant dollars were awarded to small communities (population below 4,000) and communities with high social vulnerability.

The CRP was developed with consultation from tribal communities in Maine. All the federally recognized tribes in Maine have taken the active steps of joining the CRP. Four of the five tribes have applied for and received grants to conduct community resilience projects. For example, three of the tribal communities (Penobscot Nation, Passamaquoddy Tribe at Pleasant Point, and Passamaquoddy Tribe at Indian Township) have used CRP grants to, among other activities, create local resilience committees that are educating tribal members about climate impacts and actions and are building capacity for community-level resiliency planning and projects.

In 2023, through the biennial budget, the Legislature authorized \$3 million annually for CRP grants to enrolled communities as well as service providers to help communities identify local climate and energy priorities and join the CRP. On January 30, 2024, the Governor announced an additional \$5 million in funding through the CRP.

Infrastructure Investment: *MWW* highlighted the need for funding for critical climate resilience infrastructure projects, noting a backlog of 1,798 infrastructure-adaptation projects listed across all of Maine's 16 counties at a proposed cost of \$325 million. While there are federal resources available, most require cost-share or matching funds from state or local governments. The Maine Infrastructure Adaptation Fund (MIAF) was established in 2021 with \$20 million from the federal American Rescue Plan Act (ARPA) to help meet these cost-share requirements and unlock new federal funds. MaineDOT administers the Fund which to date has helped 13 communities protect valuable civic infrastructure from climate effects. MaineDOT is currently assessing the vulnerability of state-owned infrastructure to climate impacts and is designing and engineering projects to *MWW* sea level rise recommendations. On January 30, 2024, the Governor announced an additional \$50 million in funding through the MIAF for climate-ready infrastructure projects, including working waterfronts.

Decision Support Tools: With a \$1 million investment from the federal Economic Development Administration, MaineDOT is developing the Maine Coastal Flood Risk Model (ME-CFRM), a dynamic and probabilistic sea level rise and coastal storm model for the entire coast of Maine, based on *MWW*'s sea level rise projections and NOAA's latest LiDAR data. Expected to be completed in 2025, the new ME-CFRM will provide high-resolution flood risk information to coastal users. Users of the model, such as local and Tribal government decision makers, regional planners, and coastal management professionals, will benefit from guidance on integrating the model into coastal adaptation strategies.

Economic Resilience: The Governor's *Maine Jobs and Recovery Plan* to utilize Maine's ARPA funds allocated \$50 million to support Maine's forestry, fishing and farming industries, including processing infrastructure to increase Maine's agriculture and seafood production capacity, unlock new market opportunities, and improve resilience to climate effects or market disruptions. Over half of all announced ARPA-funded recovery grant awards (51%) - and 41% of total award value - have been made to disadvantaged communities.

Regulatory Reform: The Maine Legislature enacted, and Governor Mills signed into law, more than two dozen pieces of legislation aligned with *MWW*. With renewed attention to climate action across regulatory agencies and community partners, and an executive order from Governor Mills for state agencies to collaborate and prioritize resiliency in response to unprecedented federal infrastructure funding, Maine is well poised to implement land use development strategies that will benefit at-risk communities, regions, and ecosystems. DEP has begun rulemaking and legislative work to reform regulatory construct (erosion control, stormwater, shoreland zoning, Natural Resource Protection Act [NRPA] permit by rule, site location of development, etc.) in support of climate resilience.

In addition to the investments highlighted above, *Resilient Maine* leverages and builds on Maine’s long-term collaboration with NOAA. Maine has benefited greatly from NOAA investments in the state for many years and our collaborative projects have been exemplified as national models. While the list of cooperative projects is long, a few examples include:

- Ocean habitat mapping and targeted research to help reach our offshore wind power goals while conserving important habitats.
- Rainfall models to help us understand stormwater and flooding in inland riverine watersheds.
- Support for our municipalities to do vulnerability planning and project implementation.
- Technical assistance to help us design effective public involvement programs.
- Funding for working waterfront conservation and coastal land protection.
- Innovative multi-objective restoration projects that address often conflicting goals of fisheries restoration, roadway improvements, marsh migration, and getting public facilities and private investment out of harm’s way.

In short, NOAA has helped Maine get to this place, leveraged by tremendous state resources, partnerships with other federal agencies and strong support from Maine’s non-governmental organization (NGO) community. The state’s NOAA-funded programs (Maine Sea Grant, the University of Maine, the Wells National Estuarine Research Reserve and the Maine Coastal Program) are collaborators on this proposal.

However, the widespread devastation from the December and January storms shows clearly that more support is needed to address the urgent vulnerabilities of Maine communities to intense climate effects. Communities engaged in proactive efforts to protect causeways, working waterfronts, access roads and other infrastructure are now recognizing that their worst-case scenarios for climate effects are arriving faster, and more severely, than they anticipated.

Through *Resilient Maine*, the state will invest in critical climate-resilient infrastructure and decision-support tools, and adapt state regulations for long-term, transformational climate resilience to ensure Maine is resilient and ready for generations to come. The investments outlined in this proposal support a shared vision for resilience developed through **regional coordination and collaboration** across state agencies, tribal communities, municipalities, educational institutions, and NGOs. *Resilient Maine* builds **enduring community capacity** by providing urgently needed technical assistance to municipal and tribal governments adapting to sea level rise, increased storm events, and changing economies due to climate impacts. This project will **reduce the risk** of climate impacts through investments and demonstration of nature-based solutions and will strengthen Maine’s working waterfront communities against the impacts of climate change. The **inclusive and equitable** adaptation strategies and actions included in this proposal prioritize people and communities facing multiple vulnerabilities to climate change impacts and advance the federal Justice40 initiative.

OVERALL RESILIENCE VISION, STRATEGIES, AND ACTIVITIES

Maine’s vision for resilience is that by 2029, the state will be the national exemplar for tackling climate change as a rural state accelerating progress towards the climate resilience goals outlined in the award-winning climate action plan *Maine Won’t Wait*: 1) Make Maine more resilient to the impacts of climate change, 2) Foster economic opportunity and prosperity, and 3) Advance equity through Maine’s response.

To achieve this vision, Maine proposes a suite of three integrated climate resilience-building strategies that advance the recommendations outlined in *MWW* and collectively build the capacity of underserved, rural, and Tribal communities to prepare for and respond to climate impacts:

- **Build Enduring Community Resiliency**
- **Reduce Climate Impacts through Nature-based Solutions and Investments in Green Infrastructure**
- **Strengthen Resiliency of Working Waterfront Communities**

These climate resilience and adaptation strategies were developed collaboratively across state agencies, with input from regional planning organizations, the University of Maine, community-based organizations, and coastal and tribal communities. As a result of these three strategies, Maine expects the following outcomes:

- Increase the number of towns, tribes, and unorganized territories that participate in the Community Resilience Partnership from 174 to 224.
- Complete 5-10 critical climate risk-reduction infrastructure projects and build a pipeline of 15-20 funding-ready resilient infrastructure projects.
- Expand public and private knowledge of designing and implementing nature-based solutions and green infrastructure that can withstand Maine's environment.
- Leverage federal and private climate infrastructure and investment funding.

This project will ensure that Maine's risk mitigation and climate adaptation strategies prioritize people and communities facing multiple vulnerabilities to climate change impacts. Project collaborators will be expected to target project activities to the priority populations identified in *MWW*, including low-to-moderate income households, rural and economically distressed communities, workers, and businesses.

Integrated Resilience-Building Action #1: Build Enduring Community Resiliency

Budget: \$35,176,691

MWW highlighted the need for Maine to increase support for communities to plan for and reduce their risks from climate change impacts. Lack of capacity, expertise, and funding are consistently cited by municipalities as reasons why they are not able to address their climate risks. To address this need, *Resilient Maine* builds on and expands existing activities that assist underserved rural and tribal communities to plan and implement climate adaptation strategies. Activities include:

1.1 Increase participation in the Community Resilience Partnership from 174 communities to 225 communities (of Maine's 482 communities) (Timeline – Years 1-5):

In 2021, GOPIF established the Community Resilience Partnership (CRP) to meet the need identified through *MWW* to provide climate technical assistance and funding to help towns and tribes access capacity-building resources, technical assistance, and grant funding to pursue climate resilience, emissions reduction, and clean energy projects. The CRP offers two kinds of grants:

- *Community Action Grants* of up to \$50,000 offer direct financial support to local projects that make communities more resilient to climate change effects such as flooding and extreme weather. To be eligible for *Community Action Grants*, communities must complete an enrollment process designed to help them assess their needs, set priorities, build community support, and develop a pipeline of local projects for funding. Regionally collaborative proposals are eligible to receive higher awards.
- *Service Provider Grants* help communities - especially smaller communities with fewer staff - enroll in the CRP, identify climate priorities, and apply for funding.

As of December 2023, the CRP has 174 participating communities, including all of Maine's federally recognized tribal governments, representing 57% of Maine's population.

1.2 Expand regional capacity to support municipal, tribal, and regional climate projects (Timeline – Years 1-5):

Building on the 2022 Regional Coordinator Pilot that provides capacity to communities participating in the CRP, GOPIF will establish a state-wide Resilience Collaborative. The Collaborative, a network of regional assistance providers, will provide disadvantaged and low-capacity towns and Tribes with streamlined access to a full suite of services to plan, design, and implement resilience and risk-reduction projects. The Collaborative expands capacity available to assist communities through:

- Regional assistance providers (14 full-time equivalents [FTEs]), including Maine's ten Regional Councils and other trusted regional service providers, will receive subawards to work directly with

communities to provide project development and management, technical assistance, community engagement support, process guidance, and grant writing and management services for identified resilience projects. Assistance providers will seek to leverage regional and state funding opportunities that will provide co-benefits to communities by considering transportation, housing, and other fields impacted by climate change.

- Maine Service Fellows will be placed in rural communities, based on Rural-Urban Commuting Area codes to support CRP projects. Core activities for Fellows include: 1) implementing resilience-building projects in the local community; 2) engaging volunteers and building partnerships to ensure enduring capacity for the project to continue beyond the term of service; 3) training community members and municipal officials on the use of risk reduction and climate adaptation tools and conduct outreach to ensure stakeholders are aware of these resources, and 4) engaging with vulnerable populations to ensure their participation in the overall project.

With added project management and resources to advance their resilience goals, communities working with and supported by the Collaborative will advance their identified resilience projects from concept to implementation. To demonstrate the impact on the Collaborative, Regional assistance providers will track 1) the number of funding applications for engaged communities for climate projects, including CRP grants as well as other state, federal, or philanthropic grants; 2) the dollars committed from various funding sources to implement climate projects in engaged communities; and 3) the number of community action projects initiated, and the number completed.

1.3 Capitalize the Community Resilience Partnership grant program to support community-identified risk reduction and climate resilience projects (Timeline – Years 1-4):

The CRP will make \$2.25 million available each year for four years via 20-30 subgrants to communities and multi-community collaborations. The CRRC's priorities of risk reduction, regional collaboration, equity, enduring capacity, and community engagement will be integrated with the CRP's grant criteria. The subgrants to communities will prioritize developing a local and regional project pipeline, resilient infrastructure, and nature-based solutions concepts that can take advantage of other assistance described in this proposal or larger federal funding opportunities. Past grants have included assessments of infrastructure and community vulnerability, climate adaptation plans, waterfront master plans, and inter-municipal capacity-building. The CRP prioritizes funding to small communities (pop. below 4,000) and communities with high social vulnerability. In 2022, 57% of *Community Action Grants* were awarded to small or highly vulnerable communities. GOPIF expects to meet or exceed this benchmark over the grant period. This leverages a recent \$5 million investment proposed in the Governor's supplemental budget.

1.4 Provide engineering expertise for preliminary design plans for local or regional public green infrastructure projects (Timeline – Years 1-4):

Maine communities often lack the resources for the design and engineering required to secure federal funds for priority climate resilience infrastructure projects. Through the CRP, in *Year 1*, GOPIF will contract with an engineering firm for three years to provide 150 hours of professional services to each of 20 community/regional green or hybrid infrastructure projects on public land, resulting in 30% engineering plans (including major project components and layout) that can be used to apply for federal grant funds. GOPIF will invite proposals from regions/communities once a year for three years, selecting 7-10 projects per year to work with the engineering firm. Criteria for project selection will include risk reduction potential, regional significance, benefits to vulnerable communities, and identification of aligned federal funding sources for implementation. Regional assistance providers will be available to aid communities in applying for implementation funding. This effort will build a robust pipeline of 20 green infrastructure projects that are ready to apply for the Maine Adaptation Infrastructure Fund and federal infrastructure funding.

1.5 Capitalize the Maine Infrastructure Adaptation Fund (MIAF) to support vulnerable infrastructure projects and help communities leverage federal funds to meet their needs (Timeline – Years 1-3):

Administered by MaineDOT, MIAF provides direct funding to public entities to adapt their critical infrastructure to reduce vulnerability to climate change resulting from extreme weather, sea level rise, inland and coastal flooding, severe heat, and other climate impacts. The program prioritizes infrastructure that has a great risk to public safety, documented historic events, and is located in communities with high social vulnerability. MaineDOT encourages designs that incorporate climate projections, low impact designs, and green infrastructure. *Resilient Maine* will allocate \$21 million to MIAF to support the implementation of infrastructure-adaptation projects identified through the CRP that are ready for construction and eligible for federal support or private investment. Of this allocation, \$7 million will be designated to support Working Waterfront projects.

1.6 Develop a Sustainable Funding Plan for Statewide Climate Resilience Priorities (Timeline – Years 1-3):

Sustaining and expanding Maine’s climate resilience building activities beyond the award period is a key priority of project partners. *Resilient Maine* provides an opportunity to identify, combine, and evaluate various financial and funding mechanisms that will support statewide climate resilience priorities. In *Year 1*, GOPIF will contract with a qualified consultant who will: 1) conduct a comprehensive assessment of funding options for both planning and project implementation that leads to the development of a sustainable, long-term resilience financing strategy; 2) conduct a feasibility study to explore policy, regulatory, and legislative options for execution of the strategy, including a centralized financing entity; and 3) develop a well-defined execution plan. The strategy will give priority to approaches that align with the guiding principles outlined in *MWW*. The consultant will collaborate with GOPIF, the MCC, and other stakeholders to integrate resilience priorities from state agencies and municipalities into the strategy. As a result of this activity, at the end of *Year 3*, Maine will have an actionable plan for sustainable funding and finance pathways to invest in climate-ready infrastructure beyond the duration of this project.

Integrated Resilience-Building Action #2: Reduce Climate Impacts through Nature-based Solutions and Investments in Green Infrastructure Budget: \$19,484,917

Through *Resilient Maine*, Maine will expand the availability of technical assistance tools, training, and capacity to increase community awareness of the risks of climate impacts, develop risk reduction methods and adaptation strategies, and implement climate resilience projects. State agencies will collaborate to develop new internal and external guidance, and regulatory and statutory revisions that enable and incentivize resilient designs with an emphasis on nature-based solutions. Adaptations in the state’s land-use and permitting regulations paired with increased community outreach, training, and technical assistance will reduce risk and enable more climate-ready infrastructure projects.

2.1 Develop and deploy climate risk and impact assessment tools and models to communities:

- *Maine Coastal Flood Risk Model (ME-CFRM) (Timeline – Years 2-5):* To help communities use and interpret the ME-CFRM, GOPIF will contract with a consultant in *Year 2* who will develop a ME-CFRM Model & Sea Level Rise Application Guide and provide training in *Years 3-5* to community leaders on how to access and understand the ME-CFRM outputs and integrate the information into coastal resilience strategies.
- *Coastal saltwater intrusion (SWI) groundwater monitoring network (Timeline – Years 1-5):* In *Years 1 and 2*, Maine Geological Survey (MGS) will design and implement a network of groundwater monitoring sites to identify and quantify saline water’s current and future intrusion into freshwater aquifers along the coast of Maine. In *Years 3-5*, MGS will develop and deploy technical guidance to communities to help mitigate the impacts of saltwater intrusion on freshwater resources.
- *Coastal Resilience Resources curated website (Timeline – Years 1-3):* DACF will develop a curated website to centralize coastal adaptation resources to assist communities and practitioners.
- *Inland flooding tools and resources (Timeline – Years 1-4):* GOPIF, with engagement from MaineDOT and DIFW, will align and expand existing tools and resources for inland communities to

analyze flooding risks and vulnerabilities in their community and provide adaptation strategies for inland flooding resilience.

- *Updated bluff stability and landslide hazard maps (Timeline – Years 1-3)*: MGS, in collaboration with the DMR Nearshore Marine Resources Program and the University of Maine, will develop, test, and implement an updated bluff mapping procedure and protocol to create a new, improved product that considers adjacent habitat types when determining bluff setbacks. This effort will leverage a previous NOAA Project of Special Merit (POSM) that resulted in best practices for slope stabilization.³
- *Updated Maine Shoreland Zoning publication (Timeline – Years 1-3)*: Maine DEP Shoreland Zoning, Nonpoint Source Pollution Training Center, and the CEO Training Program within the State Fire Marshalls Office will update the *Maine Shoreland Zoning publication – A Handbook for Shoreland Owners*, and shoreland zoning guidance documents to the 2015 Chapter 1000 standards. This activity would also update several natural resource regulation guidance materials that are used for trainings (several >10 years old). Updated training and guidance materials and a cooperative link will be shared with existing regional Code Enforcement Officer Groups and the Maine Municipal Association to provide consistent training and guidance materials statewide.
- *Living Shorelines and Coastal Bluffs Design Book (Timeline – Years 1-3)*: DEP will lead the creation of a green infrastructure typology book to support community decision making.
- *Establish the Maine Resilience Training Academy (Timeline – Years 1-5)*: *Resilient Maine* will centralize community and practitioner access to training opportunities on climate risk assessment and resilience building strategies with particular emphasis on nature-based solutions concepts. Based on Maine Coastal Program’s Needs Assessment Protocol, Wells National Estuarine Research Reserve (Wells Reserve), in partnership with the Maine DEP Nonpoint Source Training Center, will conduct an inventory of existing training opportunities and identify gaps (*Years 1 and 2*). Trainings expected to be delivered in *Years 2-5* include: Practitioner Certification Training (DEP), NOAA training from Digital Coast, Field Workshops on current Nature-based Solutions, and Crucial Learning training.

2.2 Expand community-based capacity to support the implementation of Nature-based Solutions (Timeline – Years 1-5):

The Maine Conservation Corps, in partnership with Volunteer Maine, will place Shore Corps Stewards within coastal state properties, government agencies, and community-based organizations engaged in implementing nature-based solutions on public property. After receiving training from the DEP Non-Point Source Training Center, Stewards will: 1) conduct site assessments for public landowners advising them on green infrastructure opportunities, native plantings, stream smart principles, and other tactics to increase resilience; 2) conduct outreach to recruit participants to receive assessments and educate community leaders and the general public about nature-based solutions; 3) coordinate community science projects to monitor green infrastructure projects and engage more people in the initiative; and 4) connect local communities to the strategies and activities included in *Resilient Maine*.

2.3 Identify and recommend climate-related changes to be made to Maine’s permitting processes (Timeline – Year 1-4):

Implementing effective land use development strategies that will benefit at-risk communities, regions and ecosystems will require updates to Maine’s regulatory construct. *MWW* includes recommendations to 1) make regulatory updates to incorporate sea level rise projections and 2) develop and implement updated land use regulations, laws, and practices. This includes reviewing recommended changes in statute or rule and implementing strategies through new internal and external guidance, and regulatory and statutory revisions that enable and incentivize resilient designs with an emphasis on nature-based solutions.

In *Years 1 and 2*, DEP will convene a cross-agency forum to help establish preferred policies agency staff can use when drafting regulatory revisions so that they conform to consensus-based preferences. The

³ https://www.maine.gov/dacf///mgs/explore/marine/living-shorelines/project_building_resiliency_along_maines_bluff_coast_2017.pdf

forum will inform state agencies on establishing regulatory reforms responsive to climate change needs allowing communities, community members, and businesses to maximize and efficiently use federal, state, and private investment opportunities to implement cost-saving design practices. The forum will also serve as an umbrella body to incorporate design selection and implementation processes happening through the demonstration projects included in this proposal. The work of the forum will result in two key deliverables in *Years 3 and 4*: 1) *Resilient Design Manual* which will compile existing and preferred permissible engineering practices being used for climate resiliency to scale application across infrastructure types; 2) *Regulatory Guidance Review Checklists* for environmental permitting staff in state agencies as well as permit applicants. Checklists will detail what natural resources agencies are looking for and what needs to be addressed for successful projects to be permitted.

2.4 Conduct Demonstration Projects to Model Implementation of Nature-based Solutions and Regional Collaboration:

2.4a: Advance Nature-Based Solutions along Maine's Bluff Coastline (Timeline – Years 1 and 2): DACF will create a pipeline of living shoreline pilot projects on public property along the bluffed coast in three regions at locations that are highly visible and offer opportunities to engage visitors in activities about shoreline dynamics, climate change and adaptation. This project element also includes the construction and monitoring of a pilot demonstration project at one site. A project team of state and federal agencies will work with interested municipalities and tribes, homeowners and consultants to 1) update Maine's living shoreline decision support tool⁴, 2) identify suitable locations for living shorelines on three publicly-owned sites⁵, 3) develop conceptual plans for three living shorelines and 4) develop draft and final drawings for one site, suitable for use to obtain construction funding, 5) construct and monitor one living shoreline site and 6) involve stakeholders from the inception of the project through completion, including site monitoring.

2.4b: Implement a replicable process for inter-agency collaboration where multiple state-owned assets are at risk (Timeline – Years 1-5): Resilient Maine will implement a process for inter-agency regional collaboration to strengthen the resiliency of state-owned coastal assets. Process elements include understanding climate risks to state-owned assets in a geography or region, community engagement, planning, prioritization, sequencing, and implementation. Two projects have been identified, the Popham Peninsula in southern Maine and the West Branch of the Pleasant River in Downeast Maine:

The Popham Peninsula in 2025 and Beyond: DMR's Maine Coastal Program will lead a planning effort to create a more resilient peninsular community at Phippsburg, ME that can serve as a model for interagency prioritization, sequencing and collaboration where multiple public assets are in the geography and are facing climate change impacts. The area includes Popham Beach State Park and the State Historic Site of Fort Popham and the Popham Colony which combined are Maine's most visited state park sites. State Route 209, a critical access and evacuation route, suffers from current flooding and potential erosion hazards. The project will develop planning strategies using previously completed efforts through a NOAA POSM⁶ and a Federal Highway Administration (FHWA) pilot study⁷. Project deliverables include: 1) Development of a Resilience Plan for the State Park and Fort Popham facilities, 2) Route 209 adaptation planning, and 3) Model ordinance language development and implementation. As a result of this activity, Maine will establish a replicable model for regional risk-reduction projects including a transferable planning and design process, planning and design documents for future improvements at state facilities,

⁴ https://www.maine.gov/dacf/mgs/hazards/living_shoreline/index.shtml

⁵ <https://www.northeastoceancouncil.org/wp-content/uploads/2022/04/Living-Shorelines-Site-Characterization-and-Performance-Monitoring-Guidance-2022.pdf>

⁶ Slovinsky, Peter A.; Leyden, Kathleen; Dickson, Stephen M.; Gordon, Ryan P.; Cameron, Don; and Spiess, Arthur, "Changing Shorelines: Adaptation Planning for Maine's Coastal State Parks" (2016). Geology Documents. 7. http://digitalmaine.com/geo_docs/7

⁷ https://rosap.nrl.bts.gov/view/dot/58162/dot_58162_DS1.pdf

increased staff capacity, implementation of public outreach activities at state-owned facilities, and development and adoption of improved coastal resilience ordinance language at the municipal level.

Restoring Saltmarsh Habitat and Tidal Function in the West Branch of the Pleasant River: DMR will lead the effort to restore 390 acres of critical saltmarsh habitat and natural tidal function through the replacement of six road-stream crossings within the communities of Addison and Columbia in Washington County. The projects are located on the West Branch of the Pleasant River which was historically tidally influenced until 1940 when flap gates were installed on the downstream end of box culverts beneath Ridge Rd., effectively preventing tidal flooding of the West Branch. Restoration of tidal flow and salt marsh habitat will strengthen community resilience to climate change through fisheries benefits, flood prevention and adaptability to sea level rise. The proposed project area is entirely within the underserved communities of Addison and Columbia and leverage NOAA’s investment in the Coastal Habitat Resilience and Community Adaptation in Downeast Maine project⁸. The census tract including Addison and Columbia is classified as disadvantaged according to the Climate & Economic Justice Screening Tool (CEJST). Washington County is the most fisheries-dependent county in Maine, and one of the most fishing-dependent areas along the entire East Coast. Funds from *Resilient Maine* will be used to convene relevant state agencies and municipalities to create a prioritized and sequenced plan for installing climate ready infrastructure.

2.5 Capitalize funding for Nature-based Solutions Risk Reduction Projects (e.g. Land Acquisition) to improve resilience for biodiversity, and species and habitat migration (Timeline – Years 1-4): MWW identified a need to secure long-term funding for natural and working lands conservation and easements, “...driven by the state’s ambitious targets and [carbon] sequestration needs...”. *Resilient Maine* will launch a new Climate Resiliency Conservation Fund to address ecological gaps on protected lands, alleviate conservation funding gaps, and leverage significant gains in protecting resilient and biodiverse landscapes. Natural landscapes and habitats that are at risk and are known to provide valuable ecosystem services that can mitigate the impacts of climate change on people, plants, and animals are the focus of conservation targets. Administered by Maine Coast Heritage Trust with support from the Maine Land Trust Network, the fund will help mitigate the impacts of climate change to biodiversity and habitats that support nature-based solutions and move the needle towards Maine’s goal of 30% land conserved by 2030 (currently at ~22% conserved) while meeting state and land trust goals. This includes advancing equity in land conservation assistance e.g., through First Light Foundation’s Conservation Community Delegation and Wabanaki Commission on Land Stewardship and collaborating with the Natural and Working Lands Work Group of the MCC which is establishing a strategic framework for meeting the goal of 30% of Maine being conserved by 2030.

<u>Integrated Resilience-Building Action #3 Strengthen Resiliency of Working Waterfront Communities</u> Budget: \$10,475,022

3.1 Provide support for Maine’s Working Waterfront (WWF) Coalition (Timeline – Years 1-5): The WWF Coalition is a leadership network of public and private waterfront properties and businesses. The Maine Coastal Program will hire a full-time Resource Management Coordinator who will work with coastal municipalities and tribes to determine needs for commercial fishing access, help prepare Maine for additional anticipated working waterfront investment both in the wake of 2023’s devastating storms and in anticipation of federal funding for a national Working Waterfront Program at NOAA supported by Senator Susan Collins and 1st District Congresswoman Chellie Pingree; and assist municipalities and tribes with developing and submitting applications to the Maine Infrastructure Adaptation Fund. The fund will be accessible for municipalities and tribes to improve waterfront infrastructure for commercial fisheries, aquaculture, and to meet demand for public access to the coast.

⁸ <https://coast.noaa.gov/states/stories/downeast-maine.html>

3.2 Build the capacity of Working Waterfront Communities to prepare for and respond to climate threats (Timeline – Years 1-5): Coastal communities and WWF property owners need help building capacity to address the complexities of climate threats as they relate to maintenance, protection, funding/financing, and engineering support. Municipal officials, harbor masters, and working waterfront business owners are not equipped with the technical and scientific capacity to stay ahead of ecological and social change they are experiencing. *Resilient Maine* will build capacity with the Maine WWF Coalition for Maine Sea Grant extension and communications staff to address needs identified by WWF stakeholders.

Maine Sea Grant will hire a WWF Extension Specialist who will work collaboratively with the Resource Management Coordinator and will: 1) conduct a statewide inventory of “at-risk” or abandoned public and private WWF properties in *Years 1 and 2*; and 2) in *Years 2 thru 5* interpret and share data, models, and case studies in collaboration with WWF Coalition partners and Maine Sea Grant Coastal Hazards Specialist, 3) provide municipal technical assistance in collaboration with MCP and MPAP, including support WWF vulnerability assessments and production of WWF asset maps using the Working Waterfront Inventory Report and Template produced by Maine Coast Fishermen’s Association⁹, 4) provide technical assistance for private WWF properties to support private infrastructure that provides a public good, and, 5) support strengthening of Maine’s WWF Coalition to develop a statewide working waterfront strategy. This activity will improve and expand capacity and technical assistance for municipalities and business owners to conduct vulnerability assessments, assess feasibility and design resiliency measures, and obtain funding for these activities. Deliverables include: 1) statewide inventory of vulnerable/at-risk areas, including matrix to identify importance and vulnerability of various parcels for diverse uses; 2) community-level WWF vulnerability assessments of all WWF areas, and 3) WWF asset maps completed for up to 30 communities.

3.3 Strengthen economic resiliency of Maine’s Working Waterfronts (Timeline – Years 1-2): With an initial investment from the federal Economic Development Agency, the Seafood Economic Accelerator for Maine (SEA Maine) has undertaken the initial development of an economic development roadmap for growth and greater resiliency in Maine’s seafood economy. Several key pieces of work overlap and dovetail with priorities established in *MWW*. Advancing these key initiatives will inform shared infrastructure needs in the sector, positioning the Maine coast for current and future investment opportunities that will build resilience to economic and environmental shocks. Led by the Maine Development Foundation (MDF), in partnership with DMR and DECD, SEA Maine will implement two recommendations of the SEA Maine Roadmap: 1) In *Year 1*, conduct a needs assessment for cooperative transportation, logistics and cold storage across coastal Maine, to understand how aggregated facilities or transportation could better serve small businesses; 2) In *Year 2*, make targeted investments to fund energy efficiency conversions or construction in public facilities or private facilities that will provide access to other companies for shared use and provide greater resilience to climate-related shocks.

FRAMEWORK FOR COLLABORATION

Organizational Structure

Governor Mills is committed to making it easier for communities to access climate resilience support and resources. *MWW* recommends that the state should “establish cabinet-level leadership (for example, a state resilience officer) and coordination across state agencies and with nonprofits, university experts, and other partners.” In response, *Resilient Maine* is proposing to establish a State Resilience Office within GOPIF and task it with leading the coordination of the activities outlined in this proposal. Other roles and tasks that would be assigned to the office include:

- 1) Develop the state resilience plan in collaboration with agencies and stakeholders.

⁹ <https://www.maineoastfishermen.org/working-waterfront-inventory>

- 2) Improve agency coordination and collaboration on resilience policy and activities by a) harmonizing policy objectives and implementation across government, b) promoting climate risk management across government, and prioritizing and coordinating projects for federal funding.
- 3) Align community technical assistance with state priorities and policies.

The Resilience Office will be staffed by one Director (NOAA 100%) and one Planner (NOAA 100%) to coordinate vulnerability assessments and adaptation planning (FEMA-funded activities). The Office will be supported by a 0.5 FTE fiscal officer and a 0.5 FTE communications manager. The proposal includes one Collaborative Program Manager to manage the regional council contracts (NOAA 100%) who will be housed in the new State Resilience Office.

Resilient Maine activities will be coordinated by the Resilience Working Group¹⁰, which was established by Governor Mills through an Executive Order in April 2022 to collaborate on and prioritize federal funding of natural resources and resilience projects. The Working Group is coordinated by GOPIF and includes the commissioners (or their designees) from MaineDOT, DMR, DEP, DIFW, and DACF.

The MCC will continue to monitor the state's progress in implementing *MWW* and set policy to move Maine's climate agenda forward. The MCC is co-chaired by the Director of GOPIF and the Commissioner of DEP and includes leadership from key collaborators on this project including DMR, DACF, DIFW, MaineDOT, DECD, and MEMA.

Role of Collaborators Additional details are provided in the attached Letters of Collaboration.

GOPIF will provide programmatic and fiscal management and oversight for Maine's CRRC project. GOPIF is currently managing three federal grants including \$3 million Climate Pollution Reduction Grants (CPRG) planning funds from the U.S. Environmental Protection Agency, \$1,668,790 Energy Efficiency and Conservation Block Grant from the U.S. Department of Energy, and \$808,600 BRIC funds from the Federal Emergency Management Agency, totaling \$5,477,390. GOPIF contracts with the General Government Service Center at the State of Maine Department of Administrative and Financial Services for financial and human resource functions to effectively manage operations.

MaineDOT will administer the MIAF and assist with the effort to expand inland flooding tools and resources. MaineDOT is an accomplished, experienced, and responsible recipient of past successful FASTLANE, TIGER, INFRA, and BUILD grants and can be relied upon to fully fund and complete the selected projects on time and on budget.

Department of Marine Resources, through the Maine Coastal Program and the Bureau of Sea Run Fish, will lead efforts to strengthen the resiliency of Maine's working waterfronts, coordinate regional planning efforts, and support riverine flood risk reduction activities.

Department of Agriculture, Forestry, and Conservation, through the Bureau of Resource Information and Land Use Planning (BRILUP) and Bureau of Parks and Land (BPL), will coordinate across agencies to support regulatory reform, update hazard mapping and technical assistance tools, design and implement a groundwater monitoring network, restore saltmarsh habitat and function, identify lands for nature-based risk reduction, and engage stakeholders and the public in nature-based solutions on public property.

Department of Environmental Protection will convene a cross-agency forum to establish preferred regulatory policies, collaborate with Wells Reserve to establish the *Maine Resilience Training Academy* to centralize community and practitioner access to training on climate strategies emphasizing nature-based solutions, and will train and support Shore Corps Stewards.

Department of Inland Fish and Wildlife will collaborate with GOPIF and partners on the development and delivery of inland flooding resilience tools and resources, and will participate in interagency efforts

¹⁰ https://www.maine.gov/governor/mills/official_documents/executive-orders/2022-08-executive-order-2-order-establishing-governors

including climate-related regulatory review, planning for resilience on the Popham peninsula and Downeast saltmarshes, and resilient land acquisition strategies.

Wells National Estuarine Research Reserve (Wells Reserve) will establish the *Maine Resilience Training Academy* and deliver training on nature-based solutions in partnership with DEP. Wells Reserve has been engaging communities and individuals in southern Maine for over 20 years on a range of natural resource protection and resilience projects.

University of Maine, Maine Sea Grant will hire a Coastal Hazards Extension Specialist and a Working Waterfront Extension Specialist to support the needs of coastal communities. Maine Climate Science Information Exchange (MCSIE) at University of Maine will bring on a new Marine and Coastal Community Specialist to enhance coordination between community projects, management needs, and research institutions. Maine Sea Grant is a long-term federal-state partnership program based at UMaine.

Volunteer Maine will manage the Maine Service Fellows Program and coordinate the Shore Corps in partnership with their AmeriCorps subgrantee, the Maine Conservation Corps. Since 1994, Volunteer Maine has developed, funded, and managed service and volunteer programs addressing the most critical needs in the state of Maine. Additionally, they have extensive experience in federal grants administration as the state partner of the AmeriCorps agency.

Maine Development Foundation on behalf of SEA Maine, will conduct a needs assessment for cooperative transportation, logistics and cold storage, and make targeted investments to provide greater resilience of facilities to climate-related impacts. SEA Maine is an industry-led collaboration between heritage wild-caught fisheries and aquaculture that developed an economic development roadmap for the future of Maine's marine living resource economy.

Maine Coast Heritage Trust (MCHT) will launch a new Climate Resiliency Conservation Fund (CRCF) to address ecological gaps on protected lands, alleviate conservation funding gaps, and leverage significant gains in protecting resilient and biodiverse landscapes. MCHT has extensive experience managing the process for regranting funds to local land trusts.

Letters of support have been provided from additional state, regional, and local agencies and organization that will be connected to, integrated, and leveraged in the project including the Passamaquoddy Tribe at Pleasant Point, the Maine Working Waterfront Coalition, the Maine Emergency Management Agency, the Nature Conservancy, the Gulf of Maine Research Institute, Regional Councils, the Center for an Ecology-based Economy, and several municipalities.

Leveraged Resources

Resilient Maine leverages significant federally supported resilience and adaptation efforts and investments. Highlights include:

- MaineDOT was awarded \$1,000,000 from the U.S. Economic Development Administration to develop the ME-CFRM for the entire coast of Maine based on NOAA's latest LiDAR data.
- The Maine Infrastructure Adaptation Fund was initially capitalized with \$20 million from the American Rescue Plan Act (ARPA), received a second allocation of \$7.5 million from the state budget, and has \$50 million proposed in the 2024 supplemental state budget.
- GOPIF received \$808,600 from FEMA to: 1) conduct a vulnerability assessment of state infrastructure to climate impacts and make recommendations to mitigate risk and 2) develop a climate resilience tool that state agencies and municipalities can use to incorporate climate resilience into the state's capital planning process and grant-making for local capital projects.
- Funded by NOAA through a Congressionally Directed Spending Request in 2022, the Maine Climate Science and Information Exchange (MCSIE) focuses on providing access to climate change research taking place in Maine and building connections among researchers and stakeholders so that Maine stakeholders can help to inform research priorities.

- Maine Sea Grant is a federal-state partnership program based at the University of Maine that receives funding from NOAA, which is matched by the State of Maine, to support marine and coastal research, education, and outreach via a marine extension team.

This project builds on many of the technical assistance tools, programs, partnerships, and studies developed and conducted by *Resilient Maine* collaborators and expands their reach to ensure that more Maine communities have access to risk reduction and climate adaptation supports. Examples of leveraged resources include:

- In 2022, Governor Mills' Executive Order 2 established the Infrastructure Implementation Committee, as well as a Resilience Working Group, to coordinate the activities of state agencies to maximize the benefit of the federal IJA for Maine's people and communities. The Committee is developing strategies to leverage the funding allocated to Maine in line with the current MaineDOT Work Plan, Maine's Climate Action Plan, and the Maine Economic Development Strategy. In addition, the Committee has established a working group to consider Justice40, the federal requirement that 40% of program investments in environmental, climate, hazard mitigation, and clean energy programs flow to disadvantaged communities.
- Site assessments and technical assistance conducted by Shore Corps Stewards will use the OUR SHORE model, as developed and refined by DEP staff. A comparable model that has been very successful in Maine inland waters is the LakeSmart program. Piloting the OUR SHORE outreach program with Shore Corps members will be an opportunity for DEP staff to refine and improve the outreach approach, recommended practices, and overall outreach/assistance to communities.
- MaineDOT's ME-CFRM Application Guide will follow the example of NOAA's *Application Guide for the 2022 Sea Level Rise Technical Report* and will provide directions on features, intended uses, and limitations of the ME-CFRM.
- MGS currently participates as a data provider with the U.S. Geological Survey National Groundwater Monitoring Network (NGWMN)¹¹ and currently monitors 10 wells and coordinates data for another 27 wells in Maine. The saltwater intrusion groundwater monitoring will be performed following accepted industry practices and guidelines published by the NGWMN.
- The Transformational Regional Project at Popham Beach will develop planning strategies using previously completed efforts: NOAA POSM¹² completed in 2016 and a FHWA study on Green Infrastructure Techniques for Coastal Highway Resilience¹³.
- The Maine Sea Grant WWF Specialist will leverage the Maine Coast Fisherman's Association's (MCFA) work to analyze the existing landscape of how municipalities have incorporated working waterfront into their comprehensive plans and coastal ordinances. MCFA developed a process and standard data collection template for communities to inventory their working waterfront. By completing this inventory, towns can collect data on working waterfront infrastructure and the local economic impact of fisheries and aquaculture using an accessible, step-by-step approach.¹⁴

Sustaining coordination and collaboration

The existing Maine Climate Council process, committee and work group structure will leverage additional community engagement, emphasize equity in process and outcomes, and be woven into this work over the next five years. The MCC is required by statute to update the state's climate action plan

¹¹ <https://cida.usgs.gov/ngwmn/>

¹² Slovisky, Peter A.; Leyden, Kathleen; Dickson, Stephen M.; Gordon, Ryan P.; Cameron, Don; and Spiess, Arthur, "Changing Shorelines: Adaptation Planning for Maine's Coastal State Parks" (2016). Geology Documents. 7. http://digitalmaine.com/geo_docs/7

¹³ [FHWA pilot study](#)

¹⁴ [Working Waterfront Inventory Report and Template](#)

every four years, including strategies to increase resilience to climate impacts and reduce emissions. The MCC is currently working on the December 1, 2024 climate action plan update, including the development of resilience goals and metrics.

The updated climate action plan will inform the development of a State Resilience Plan that will:

- Integrate and synthesize results of various state vulnerability and risk assessments (e.g., by MaineDOT, ME-CFRM, MEMA-SHMP, GOPIF).
- Develop strategies and specific actions to meet MCC adaptation goals and targets.
- Recommend policy changes for implementation via legislation, executive order, rulemaking, and agency discretion.
- Recommend funding and finance mechanisms for state and local governments to implement climate adaptation plans, strategies, and projects.

The State Resilience Plan, coupled with the programs, policies and practices developed and evaluated as part of *Resilient Maine*, will inform the development of future climate action plan updates in 2028 and every 4 years. The partners engaged in this proposal will continue to collaborate on the State Resilience Plan as well as future climate plans.

ENGAGEMENT, WORKFORCE DEVELOPMENT, AND KNOWLEDGE TRANSFER

Community Engagement and Knowledge Transfer

Achieving Maine’s climate goals will require effective communication about climate impacts and opportunities for communities and individuals to act. *MWW* recommends an ongoing communications effort to raise public awareness and understanding about climate change in Maine, the state’s climate response, and climate related programs and opportunities. It also recommends increasing public education offerings including regional and community-based technical assistance. *Resilient Maine* will leverage existing communication strategies, as well as add communication capacity at GOPIF, to share information about the project’s activities and adaptation actions, engage the public and other stakeholders, and share best practices for climate action.

The Resilience Collaborative: GOPIF’s Resilience Collaborative will serve as a resource network that significantly increases capacity by bringing a variety of expertise, tools, and guidance for Maine communities to access with minimal barriers. The Collaborative will take advantage of state-wide and regional connectivity to leverage information sharing, resource mobilization, expertise, and funding opportunities to assist communities in implementing projects that address the impacts of a changing climate and reduce risk to populations, infrastructure, economies, and ecosystems. The Collaborative will ensure that rural and disadvantaged communities have access to and are connected with the risk mitigation and resilience-building tools, training, and technical assistance resources developed and expanded through *Resilient Maine*.

Climate Communications Coordinator: GOPIF will hire a Climate Communications Coordinator who will help share success stories, best practices, and other resilience resources, leveraging websites, newsletters, and existing information-sharing networks.

Communities Leading on Change Conference: Annually, the MCC hosts conferences and webinars featuring stories and resources to support community climate action. In the prior two years, the conferences were attended by more than 500 people both in-person and virtually and delivered presentations on community action, funding, and other opportunities as well as success stories about climate action around the state.

Climate Science Dashboard: The MCC launched the Climate Science Dashboard¹⁵, to enable Maine people to explore historical observations and future scenarios for three key climate change indicators:

¹⁵ <https://www.maine.gov/climateplan/climate-impacts/climate-data>

land temperatures, ocean surface temperatures, and sea level rise. The dashboard was updated in 2023 to add climate change-related health data as a result of a partnership with the Maine CDC.

Maine Climate Science Information Exchange (MCSIE): The University of Maine launched MCSIE to serve as a coordinating hub with state, community and NGO partners for climate change research and monitoring. The University of Maine will hire a Marine and Coastal Community Specialist who will help ensure that municipal leadership is well-informed about climate science, community organizations know how to connect and collaborate with research institutions, and there are effective communication channels to link decision-making needs with research development.

Sustainable Funding Plan Development: As part of the funding plan development, GOPIF will convene an advisory group including the Governor’s Energy Office, DECD, MaineDOT, Maine State Treasurer, and others to advise at key points in the process. To ensure full alignment with the MCC’s vision, GOPIF and the consultant will continually seek and incorporate feedback from stakeholders throughout the process, including state agencies, legislators, existing quasi-public lending and finance authorities, community development finance institutions, private banks, and potential beneficiaries such as municipalities and infrastructure districts.

Bipartisan Infrastructure Law Implementation (BIL) Committee: In April 2022, Governor Mills established the BIL Committee through Executive Order¹⁶ to coordinate the activities of state agencies to maximize the benefits of the Infrastructure Investment and Jobs Act of 2021. The BIL is developing strategies to leverage the funding allocated to Maine in line with the current MaineDOT workplan¹⁷, *Maine Won’t Wait*, and Maine’s Economic Development Strategy¹⁸. The BIL is staffed by GOPIF and includes the commissioners (or their designees) from DAFS, DECD, DEP, DHHS, MaineDOT, and the Governor’s Energy Office (GEO). The BIL maintains a dashboard that includes a searchable database of BIL investment in Maine as well as active and upcoming funding opportunities. The BIL will be instrumental in connecting CRRC investment to leverage other BIL funding opportunities.

GOPIF will leverage these and other communication strategies to ensure that the tools, training, and technical assistance developed through *Resilient Maine* are accessed and implemented by local and regional stakeholders who are working towards implementing adaptation and resilience projects.

Workforce

Resilient Maine will expand workforce capacity at the regional and local level to facilitate connecting rural and underserved communities to the resources outlined in this proposal, including:

Regional Coordinators: Through the Regional Collaborative, GOPIF will subaward to 14 regional assistance providers to work directly with communities to provide project development and management, technical assistance, community engagement support, process guidance, and grant writing and management services for identified resilience projects. Assistance providers will seek to leverage regional and state funding opportunities that will provide co-benefits to communities by considering transportation, housing, and other fields impacted by a changing climate.

Maine Climate Corps: The Maine Climate Corps Network is a strategy outlined in *MWW* to expand capacity to engage with Maine people and communities about climate impacts and program opportunities. Due to limited capacity and lack of paid staff, small Maine communities routinely request placements of Climate Corps members to support their projects. Members have been instrumental in moving projects forward at the local level and have leveraged additional resources. Volunteer Maine will recruit, train, and place Maine Service Fellows in rural communities who are participating in the CRP. Additionally,

¹⁶ https://www.maine.gov/governor/mills/official_documents/executive-orders/2022-08-executive-order-2-order-establishing-governors

¹⁷ <https://www.maine.gov/mdot/projects/workplan/>

¹⁸ https://www.maine.gov/decd/sites/maine.gov.decd/files/inline-files/DECD_120919_sm.pdf

Volunteer Maine will coordinate with the Maine Conservation Corps' Shore Corps to place members in coastal organizations to implement nature-based solutions on public property, including the Popham Peninsula.

Maine Sea Grant Coastal Hazard Extension Specialist: The Coastal Hazards extension specialist will be supported in partnership with MCP, MGS, and faculty from the UMaine Department of Civil and Environmental Engineering. Additional collaborators on this work will include DEP, MaineDOT, and coastal municipalities. The specialist will co-develop accessible, user-friendly geospatial mapping tools to convey hazards at a municipal and parcel scales and with guidance for human and infrastructure risk reduction by using nature-based engineering alternatives.

Sea Grant Working Waterfront (WWF) Specialist: Working closely with the Coastal Hazards Specialist, Maine Sea Grant's WWF Specialist will help translate complex climate change models to help municipalities and private WWF property owners plan for the future, prioritize infrastructure resilience projects, and secure funds to ensure WWF are structurally able to withstand future threats such as sea level rise and flooding, increased storms and storm surges.

Volunteer Engagement: Key to enduring capacity in Maine's rural and underserved communities is strengthening and expanding volunteer engagement. Volunteer education and training to access and implement risk mitigation tools and resources is a common thread throughout the capacity building and technical assistance positions included in this proposal. Recognizing that these grant-funded positions may end at some point, strengthening the capacity of community volunteers, local leaders, and municipal natural resources staff will be critical to sustaining local and regional climate planning, risk reduction and adaptation strategies, and resilience project management beyond the grant period.

The following positions will be hired to implement the adaptive actions included in *Resilient Maine*:

Position	Role	Agency
State Resilience Office Director	Lead <i>Resilient Maine</i> Implementation	GOPIF
State Resilience Office Lead Planner	Coordinate FEMA-funded vulnerability assessments and adaptation planning	GOPIF
Resilience Collaborative Program Manager	Provide support for Resilience Collaborative and conduct community and stakeholder engagement	GOPIF
Fiscal Officer	Provide budget management, oversight and assist with grant reporting	GOPIF
Communications Coordinator	Expand and sustain climate-related communications capacity	GOPIF
Resilience Collaborative Coordinators (14 FTEs)	Provide project development and management, technical assistance, community engagement support, process guidance, and grant writing and management services for community resilience projects	Contracted through GOPIF
Maine Service Fellows Program Director	Recruit, place, and support Maine Service Fellows in rural communities	Volunteer Maine
Maine Service Fellows (5 annually for 4 years)	Assist rural communities who are participating in the CRP	Volunteer Maine
Shore Corps Stewards (4 annually)	Assist coastal state properties, government agencies, and CBOs implement nature-based solutions	Maine Conservation Corps
ME-CFRM Consultant	Assist communities in the use and application of the ME-CFRM	Contracted through GOPIF
Contract Engineering Expertise	Provide a cohort (up to 20) communities with up to 150 hours each to develop 30% engineering designs	Contracted through GOPIF

Senior Resource Biologist	Support regulatory review and reform, and development and deployment of inland flooding resources	DIFW
Nonpoint Source Assistant Coordinator	Assist Nonpoint Source Training Center and increase accessibility of regulatory guidance.	DEP
Coastal Engineer	Provide expertise in designs and design book and approve plans for demonstration projects	DEP, DACF/MGS
Facilitator	Facilitate inter-agency Forum for regulatory reform	DEP
Coastal Hazard Specialist	Support interagency regulatory work, bluff mapping, NRPA reviews, and the Popham Peninsula project	DACF/MGS
Marine Resource Scientist II	Assist with municipal resilience project implementation, convene stakeholder meetings	DMR
Resource Management Coordinator	Working Waterfront Coalition leadership and coordinator	DMR/MCP
Marine and Climate Science Specialist	Enhance coordination between community projects, management needs, and research institutions	UMaine/Maine Sea Grant
Coastal Hazard Specialist	Deploys the ME-CFRM and provide guidance for risk reduction using nature-based engineering alternatives	UMaine/ Maine Sea Grant
Working Waterfront Specialist	Assist municipalities and private WWF property owners plan and implement infrastructure resilience projects	UMaine/ Maine Sea Grant
Nature-Based Solutions Coordinator	Assess training needs, inventory existing programs, coordinate delivery of nature-based solutions	Wells Reserve
Land Acquisition Fund Manager	Oversee competitive grants funds to support the conservation of strategic lands	Maine Coast Heritage Trust
Sustainable Funding Plan Consultant	Develop a long-term funding plan to sustain Maine’s investments in climate resilience	Contracted through GOPIF
Project Evaluation Team	Evaluate the impacts of the project and progress towards the long-term outcomes	Contracted through GOPIF

STRATEGY FOR ADVANCING EQUITY AND SUPPORT FOR UNDERSERVED COMMUNITIES

MWW emphasizes the need to advance equity through the state’s climate response. The Equity Subcommittee (ESC) of the MCC was established to support ongoing planning and implementation of the state’s climate strategies to ensure shared benefits across diverse and underserved populations in Maine. The ESC is co-chaired by the Executive Director of the Elmina B. Sewall Foundation, one of Maine’s largest foundations, and the Ambassador from the Penobscot Nation, one of Maine’s tribal communities.

The ESC builds upon a groundbreaking equity analysis of the MCC’s climate strategies that took place during the summer of 2020¹⁹. That analysis, by the Senator George J. Mitchell Center for Sustainability Solutions at the University of Maine²⁰, placed an equity lens on the four-year climate action plan, and identified the need for further focus on ensuring climate equity in Maine as the state seeks to implement climate mitigation and adaptation programs. As defined by the ESC, “equitable climate action” requires the thoughtful distribution of benefits and mitigation of burdens, so that policies intended to fight climate change do not instead cause further harm.

Following the release of *MWW*, the ESC met to make recommendations for ensuring that all Mainers can benefit from climate action. Over the course of their work, the subcommittee reviewed the strategies in *MWW* to identify opportunities to ensure that Maine’s climate response reaches those most in need, worked with state agencies and the MCC’s Working Groups to refine those recommendations and

¹⁹ https://www.maine.gov/future/sites/maine.gov.future/files/inline-files/MCC_EquityAssessmentReport_201007.pdf

²⁰ <https://umaine.edu/mitchellcenter/>

highlight actions already underway, and developed equity metrics to ensure that programs and benefits reach priority populations and communities. In January 2023, the ESC adopted its final recommendations for submission to the MCC²¹.

The equity recommendations in the report are organized to align with the strategies in *MWW*. They include actions to ensure that the benefits of Maine’s climate actions reach those who most need it, and support increased participation in state climate and energy processes. There are specific recommendations for the MCC to consider integrating equity more firmly into the state’s climate action plan going forward. Those recommendations are currently being incorporated into the update of the state’s climate action plan. The report also includes 15 equity outcome metrics, which break down existing *MWW* indicators to assess where climate actions are happening and who is benefiting.

Several of these outcome metrics align with and will inform the expected outcomes for *Resilient Maine*:

- Increase the number of towns, tribes, and unorganized territories that participate in the Community Resilience Partnership from 174 to 224.
 - *Equity metric: number and percentage of priority communities participating*
- Complete 5-10 critical risk-reduction infrastructure projects and build a pipeline of 15-20 funding-ready resilient infrastructure projects.
 - *Equity metric: Distribution of climate-ready infrastructure projects by priority community and geography*
- Expand public and private knowledge of designing and implementing nature-based solutions and green infrastructure that can withstand Maine’s environment.
 - *Equity metric: number and percentage of events held in priority communities*
 - *Equity metric: number and percentage of participants from populations*
- Leverage federal and private climate infrastructure and investment funding.
 - *Distribution of climate-ready infrastructure funding by priority population and geography*
 - *Distribution of natural resource grant funding by priority population and geography*

Many of the state agencies and programs that are collaborating on *Resilient Maine* already prioritize people and communities facing multiple vulnerabilities:

- DMR’s Maine Coastal Program²² and DEP’s Municipal Stream Crossing Upgrade Grant Program²³ both prioritize available funding for those communities at the highest risk of climate change by considering previous flooding events, safety and community impact of failed infrastructure, and a Maine-specific analysis of community vulnerability to sea level rise.
- DACF, in partnership with DMR, administers the Coastal Community Grant program, a program funded by NOAA. In 2022, funding prioritized the preparation of plans related to *MWW*, and awarded bonus points for proposals that served communities identified by the SVI.
- DEP, in partnership with The Nature Conservancy, the Maine Sea Grant and others finalized and distributed a Community Resilience Workbook to help communities include resilience, climate adaptation, and assessment in their planning processes. The workbook takes into consideration equity and community engagement, adaptive capacity and climate vulnerability, socioeconomic and cultural impacts of climate change and adaptation, and many other factors that can inform equitable design and implementation of community resilience planning efforts. BRILUP has hired a new Senior Planner who is responsible for providing technical assistance for the workbook.

²¹ https://www.maine.gov/future/sites/maine.gov.future/files/inline-files/Maine%20Climate%20Council_Equity%20Subcommittee%20Final%20Report_March%202023.pdf

²² <https://www.maine.gov/dmr/programs/maine-coastal-program>

²³ <https://www.maine.gov/dep/land/grants/stream-crossing-upgrade.html>

- To ensure funding from the MIAF was distributed across all geographical and social classes of Maine, MaineDOT reviewed projects for location and social vulnerability, relating to the circumstances of a person or community that affect their capacity to anticipate, confront, repair, and recover from the effects of a disaster. The SVI was used to help identify vulnerable populations and what factors drive those vulnerabilities. In its first round of funding, eight of the thirteen projects funded are in locations of either high or medium social vulnerability, comprising approximately 75% of total award funds. The required local match funds are lower for applicants in high vulnerability areas.
- Over the coming year, the UMaine, on behalf of the MCC, will partner with community-based organizations across the state to engage with low-income and disadvantaged communities and priority populations to contribute to the climate planning process, support members of low-income and disadvantaged communities and priority populations who are members of the MCC working groups, and develop and provide equity training and guidance to the MCC.
- Volunteer Maine has taken significant steps to incorporate equity into its Maine Climate Corps programming including: incorporating questions about community and Indigenous collaboration, non-discrimination and accessibility, recruitment and demographics of members, and demographics of service areas and beneficiaries in the Request for Applications; including youth members and broad geographic representation on the Climate Corps Task Force; prioritizing climate corps assistance to disproportionately affected communities; and ensuring equity between rural and more urban regions of Maine.

Resilient Maine provides an opportunity to build on these efforts and ensure that Maine’s risk mitigation and climate adaptation strategies prioritize people and communities facing multiple vulnerabilities to climate change impacts. Project collaborators will be expected to target activities to the priority populations identified in *MWW*, including low-to-moderate income households, rural and economically distressed communities, workers, and businesses. GOPIF also expects activities to align with the Justice40 initiative and ensure that at least 40% of implementation projects occur in LIDAC communities.

Additional efforts to support equity in Maine’s climate change response

The ESC’s work is occurring in parallel with other important, equity-driven work in the state and nationally. Chief amongst this is the federal Justice40 initiative, a whole-of-government effort to ensure that federal agencies deliver at least 40 percent of the overall benefits from federal investments in climate and clean energy to disadvantaged communities. This includes federal investments in clean energy and energy efficiency; clean transit; affordable and sustainable housing; training and workforce development; the remediation and reduction of legacy pollution; and the development of critical clean water infrastructure. Justice40 requires federal agencies to identify the benefits of covered programs, determine how covered programs distribute benefits to disadvantaged communities, and calculate and report on reaching the 40% goal.

The Maine State Legislature recently enacted the Tribal-State Collaboration Act,²⁴ which requires all state agencies to designate a tribal liaison and adopt a collaboration policy to guide interactions with tribal communities. The goal of this law is to promote respectful, government-to-government dialogue, and improve communication between state agencies and tribal communities.

DACF staff have participated in the First Light Learning Journey program, a year-long program for the Conservation Community in Maine, including NGOs and government agencies that own or manage lands and/or work with private landowners, funders, advocacy organizations. First Light’s goal is to expand Wabanaki access and stewardship of land for prosperity and to create a stronger conservation movement that includes and reflects Indigenous expertise and perspective.

²⁴ <https://www.mainelegislature.org/legis/bills/getPDF.asp?paper=HP0428&item=14&snum=130>

EVALUATION

To evaluate the performance of the proposed climate-resilience strategies, GOPIF proposes to monitor and report on project-level performance measures aligned with NOAA’s CRRC priorities including:

<p>Risk Reduction:</p> <ul style="list-style-type: none"> • Acquisition: Number of acres acquired • Natural infrastructure: Number of linear feet, square feet, or acre feet of improvements • Planning: Number of multi-jurisdictional adaptation plans and strategies • Policy: Number of laws, regulations, policies, standards to reduce risk or enhance resilience, and number of communities that benefit
<p>Regional Coordination and Collaboration:</p> <ul style="list-style-type: none"> • Number of coastal counties benefiting from challenge supported activities • Number and type of entities receiving challenge funding
<p>Enduring Capacity:</p> <ul style="list-style-type: none"> • Number of good jobs supported • Number of training and capacity-building activities completed • Number of individuals trained and engaged in capacity-building • Number and type of data sets, information products, and tools developed to inform resilience planning and implementation
<p>Equity and Inclusion:</p> <ul style="list-style-type: none"> • Number of Justice40 communities participating • Total funding awarded to tribes, tribal organizations, or other organizations serving Indigenous communities • Number of tribes, tribal organizations, or other organizations serving Indigenous communities participating • Number of disadvantaged communities serving as collaborators or partners, and amount of funding provided • Number of disadvantaged communities participating

To inform CRRC performance measures, lead organizations will be responsible for tracking the performance measures associated with specific project activities and providing quarterly updates to the Project Director. The Project Director will provide a quarterly report on *Resilient Maine* activities to the Resilience Working Group, a semi-annual program report to NOAA and an annual report to the Maine Climate Council. Activity outcomes include:

Activity	Lead Organization(s)	Performance Measures
Action #1: Build Enduring Community Resiliency		
1.1 Increase participation in the Community Resilience Partnership	GOPIF	# of communities enrolled in the CRP
1.2 Expand regional capacity to support municipal, tribal, and regional climate projects	GOPIF	# of funding applications for engaged communities for climate projects; dollars committed from state, federal, and philanthropic funding sources to implement climate projects; and, # of community action projects initiated and the # completed.
1.3 Capitalize the Community Resilience Partnership grant program	GOPIF	# of CRP grants awarded; % of grants awarded to small or highly vulnerable communities

1.4 Provide engineering expertise for 30% engineering plans for local or regional public green infrastructure projects	GOPIF	# of green infrastructure projects that are ready to apply for the Maine Infrastructure Adaptation Fund and/or other federal infrastructure funding.
1.5 Capitalize the MIAF to support vulnerable infrastructure projects and help communities leverage federal funds to meet their needs	MaineDOT	# of green infrastructure grants awarded; % of grant awarded to small or highly vulnerable communities; federal dollars leveraged
1.6 Develop a Sustainable Funding Plan	GOPIF	Actionable sustainable funding plan implemented
Action #2 Reduce Climate Impacts through Nature-based Solutions and Investments in Green Infrastructure		
2.1 Develop and deploy climate risk and impact assessment tools and models to communities		
<i>Maine Coastal Flood Risk Model</i>	GOPIF, MaineDOT	Application Guide produced; # and geographic location of leaders who receive training and report implementing the model
<i>Saltwater Intrusion Monitoring Network</i>	MGS	# and geographic distribution of wells being monitored and communities receiving technical assistance
<i>Coastal Resilience Resources curated website</i>	DACF	Website completed; # of unique visitors
<i>Inland Flooding Tools and Resources</i>	MaineDOT, GOPIF, DIFW	# and type of tools developed and deployed; geographic distribution of communities receiving technical assistance
<i>Updated Bluff Stability and Landslide Hazard Maps</i>	MGS	Updated bluff mapping procedures and protocols developed and deployed
<i>Updated Shoreland Zoning Publication</i>	DEP	Updated shoreline zoning guidance developed and deployed; # and geographic distribution of municipal staff trained
<i>Living Shorelines and Coastal Bluffs Design Book</i>	DEP	Updated design book developed and deployed
<i>Maine Resilience Training Academy</i>	Wells Reserve	# and type of training modules available, # of participants, % participants from small or highly vulnerable communities
2.2 Expand community-based capacity to support the implementation of Nature-based Solutions (NbS)	Maine Conservation Corps; Volunteer Maine	# of site assessments completed; # of community members participating in NbS projects; # of green infrastructure projects identified
2.3 Identify and recommend climate-related changes to Maine's permitting processes	DEP	Completion and distribution of a <i>Resilient Design Manual</i> and <i>Regulatory Guidance Review Checklists</i>
2.4a Advance Nature-Based Infrastructure along Maine's Bluff Coastline	DACF, MGS	Update Maine's living shoreline decision support tool; develop conceptual plans for three living shorelines; develop draft and final drawings for one site, suitable to obtain construction funding; construct and monitor one living shoreline site

2.4b Implement a replicable process for inter-agency collaboration where multiple state-owned assets are at risk	DMR, Maine Coastal Program	Establish a model for interagency prioritization, sequencing and collaboration where multiple public assets are in the geography and are facing climate change impacts
2.5 Capitalize funding for nature-based solutions Risk Reduction Projects (e.g., Land Acquisition)	Maine Coast Heritage Trust	# of acres of land conserved, # of land acquisition projects funded; dollars leveraged via complementary funds or in kind; increased land acquisition in Beginning with Habitat Focus Areas and marsh migration space
Action #3: Strengthen Resiliency of Working Waterfront Communities		
3.1 Provide leadership for Maine’s Working Waterfront (WWF) Coalition	DMR, Maine Coastal Program	# of WWF Infrastructure Fund grants awarded; % of grant awarded to small or highly vulnerable communities; federal dollars leveraged
3.2 Build the capacity of Working Waterfront Communities to prepare for and respond to climate threats	UMaine, Maine Sea Grant	Statewide inventory of vulnerable/at-risk properties; community-level WWF vulnerability assessments; WWF community asset maps completed
3.3 Strengthen economic resiliency of Maine’s Working Waterfronts	MDF, SEA Maine	Needs assessment for cooperative transportation, logistics and cold storage; # of and dollars invested in energy efficiency conversions

An update on Resilient Maine’s outcomes and impact will be included in the annual MCC progress report. *MWW* established metrics for tracking progress and releases an annual progress report, recognizing that clear metrics for Maine’s climate goals are critical for informing the public about whether policies are having the intended outcomes and for making evidence-based adjustments, enhancements, or replacements to policies in pursuit of the state’s 2030, 2045, and 2050 targets.

GOPIF will contract with a project evaluation team to evaluate the impacts of the project and progress toward the long-term outcomes which include:

- Increase the number of towns, tribes, and unorganized territories that participate in the Community Resilience Partnership from 174 to 224.
- Complete 5-10 critical risk-reduction infrastructure projects and build a pipeline of 15-20 funding-ready resilient infrastructure projects.
- Expand public and private knowledge of designing and implementing nature-based solutions and green infrastructure that can withstand Maine’s environment.
- Leverage federal and private climate infrastructure and investment funding.

To monitor equitable outcomes, agencies and programs participating in *Resilient Maine* need to know where actions are happening geographically, and who is benefiting. Across CRRC-related programs and investments, state agencies and other partners will work with the evaluation team to track the geographic distribution of participation, projects, or spending in priority communities to determine share among priority communities. The evaluation team will coordinate with ongoing internal evaluation processes occurring within state agencies or programs that are expanding with this funding. For example, the CRP is tracking progress on decreasing vulnerability of participating communities by a time-series evaluation using the SVI, and the program’s annual report includes equity metrics. In addition, the Resilience Working Group is developing resilience metrics to consider for incorporation into the MCC. Finally, the ESC developed outcome and procedural equity metrics that are being incorporated into all the working groups in 2024 and can also be included in the methodology developed by the evaluation team.

OPTIONAL: Anticipated Needs for Technical Assistance from NOAA

The project team anticipates technical assistance from NOAA would bolster the success of *Resilient Maine*. Our proposed project efforts will improve the capacity of our communities and state agencies to respond to impacts of climate change. Given this, providing training and technical resources to our communities and agencies is a key aspect of proposed grant activities. The project team for *Resilient Maine* has extensive experience designing training program opportunities and developing user-friendly tools to assess coastal hazard risk and plan for resiliency needs. However, we recognize that the NOAA Office of Coastal Management has successfully developed and implemented a wide array of training tools using the office's scientific expertise and experience. The project team anticipates that technical assistance from NOAA to a) carry out NOAA training programs, and b) incorporate important principles from NOAA's robust training mechanisms, would strengthen project outcomes.

Potential areas of training that NOAA could provide technical assistance on include: project assistance for green infrastructure application training (such as adaptation of NOAA's Office of Coastal Management Digital Coast Training materials on green infrastructure to be Maine-specific), applying nature based solutions to mitigate coastal hazards, planning for coastal risk adaption, building risk communication within communities, and providing economic guidance for coastal management professionals. As part of our proposed Maine Service Fellow placements, we anticipate NOAA technical assistance on training Service Fellows would be beneficial. Training areas for Service Fellows will include resilient adaptation strategies, understanding ecosystem services, using natural infrastructure in design, communicating risk to stakeholders, and assessing vulnerabilities. Similarly, any lessons learned from NOAA's Gulf Corps project regarding successful and realistic projects for Corps members to deploy would be beneficial to the success of our Maine Service Fellows.

In addition, our project proposes several applied uses of data and models that we anticipate could benefit from NOAA's scientific expertise technical assistance. This includes the assistance on the development of the ME-CFRM application guide (potentially adapting key guide components from national application guides NOAA has developed), as well as guidance on incorporating revised sea level rise projections and the upcoming National Tidal Datum Epoch into model outputs, mapping portal products, and project engineering designs.

If successful with this proposal, GOPIF will invite various NOAA representatives to the table to determine interest and capacity for collaboration. Maine anticipates collaboration with the Office for Coastal Management (Geospatial, Stewardship and Learning Services Division), the National Weather Service and the National Center for Coastal and Ocean Studies. In addition, the project team would be interested in discussing with NOAA the placement of a NOAA fellow to support project initiatives.