Community Resilience Planning, Public Health, & Emergency Management Working Group

**Strategy # 3 - Funding Mechanisms to Achieve Resilience**

Recommended Climate Strategies,

Actions and Measurable Outcomes

1. Describe the Recommended Strategy and how it addresses Maine’s climate resiliency and mitigation goals.

**Summary**: Funding resilience to the impacts of climate change will be expensive. Such investments in resilience, however, will cost less than responding to repetitive and increasing climate impacts that compound virtually all contemporary social problems. The profound economic disruption posed by the COVID-19 pandemic will demand even greater efficiency than was already obvious at the launch of the Maine Climate Council’s work. Thus, the actions recommended in this strategy call for investment of dollars but especially for coordination, efficiency, collaboration, and incentivizing behavior.

The strategy recommends Executive Orders to establish cabinet level coordination across state agencies so that funding priorities are consistent and can reach communities and regional organizations who are ready to implement adaptation solutions. The strategy also recommends assembly and maintenance of a clearing house of funding options from public and private sources and the development of, and participation in, creative financing ideas within and beyond Maine’s border. In addition to the job creation potential of climate resilience (in design, construction, project management, operation and maintenance) there are benefits associated with reduced vulnerability, avoided economic disruption, continuity and reduced response time after disaster, achieving greater resilience over time, and reliance on functional regional networks and existing local governance structures.

* 1. For adaptation strategies, what climate impacts does it address? How will this strategy reduce the vulnerability of Mainers to the impacts of climate change?

As an overall funding mechanisms strategy, all climate impacts area addressed.

* 1. List any site-specific geographies where the strategy would be applied.

As above, the strategy applies statewide.

1. What is your measurable outcome for this strategy, assuming all recommended actions to implement the strategy are achieved?
   1. For mitigation strategies:
      1. What is the estimated CO2e savings (metric tons) by 2025, 2030, 2050?

N/A

* + 1. What is the cost effectiveness of those reductions (cost per ton of CO2e reduced) and the total cost?

N/a

* 1. Are outcomes measurable with current monitoring systems?

N/A

1. What specific actions would be required to implement the strategy, including but not limited to legislation or regulation.  Examples include: establish a program or a fund, conduct additional research, provide education or training, coordinate with other parties/agencies/states, etc. Considering the recommended actions listed, who, if they can be named, are the specific actors needed for implementation?
2. Issue Executive Order that all state agencies support communities in the preparation of climate resilience assessments and plans as needed,
   1. Establish cabinet-level leadership (like the former Land and Water Resources Council) to coordinate across agencies and cultivate non-profit and private sector partnerships to support local, regional and state community resilience efforts
   2. Designate GOPIF as the lead agency/office for this inter-agency effort
   3. Develop inter-agency Memorandum of Agreement for a resilience implementation coordinating group[[1]](#endnote-1) (Build on work of interagency climate resource groups from previous administration – Environmental and Energy Resources Work Group and [Maine Interagency Climate Adaptation work group](https://www.maine.gov/dep/sustainability/climate/MainePreparesforClimateChange2018Update.pdf) )
   4. Consider adapting Pennsylvania municipal flood protection program[[2]](#endnote-2) that provides high level of State assistance to municipalities (initial evaluation of flood risk, design, funding, construction for projects exceeding a 1:1 cost benefit ratio) for stream and riverine flood risks.
   5. Establish a resilience officer and criteria (duties and qualifications) for a State resilience officer in lead and partner agencies
   6. Increase financial support to regional planning agencies to achieve efficiencies in support for municipalities (see Resilience Strategy #2 “Improve Delivery System of Technical Assistance on Resilience to Municipalities)
   7. Prioritize financial support for:
      1. the augmentation and distribution of data packages to municipalities for Comprehensive and/or Climate Resilience Planning to include climate resilience data.
      2. basic funding for preparation of Comprehensive Plans and Climate Vulnerability/Resilience Plans.
      3. Stream Smart[[3]](#endnote-3) and Coast Wise[[4]](#endnote-4) technical assistance programs.
3. Reward communities who cooperate regionally and leverage public funds with non-profit and private sources (For example Island Institute, The Nature Conservancy, Soil & Water Conservation Districts, Maine Municipal Bond Bank)
   1. Build on and integrate regional hazard mitigation plans, adaptation, and transportation/infrastructure/ capital investment plans to achieve economies of scale and save costs.
   2. Review and update the budgeting and financing sections of existing plans and planning mechanisms to integrate adaptation and climate resilience into local and regional investment strategies.
   3. Regionalize and cooperate to compete nationally for funding (example, Maine Municipal Bond Bank, Finance Authority of Maine, and ME Insurance)
   4. Develop long-term capital plans to demonstrate need and access bond market.
4. Issue Executive Order that state funding programs *that have climate mitigation and adaptation implications* include provisions that award preference to those communities, or multi-municipal districts, with locally adopted planning initiatives that develop resilience[[5]](#endnote-5) (modeled on provisions in Title 30-A, Chapter 187 [Section 4349A-1 State Capital Investments](http://legislature.maine.gov/statutes/30-a/title30-Asec4349-A.html)),
   1. Create list of criteria for awarding resilience points in grant, loan, or bond fund programs that address mitigation and resilience efforts.
   2. Coordinate among agencies to ensure
      1. Consistent climate resilience criteria across rulemaking initiatives (see next Action re incentives).
      2. Inclusion of resilience considerations into guidance documents for completion of plans for downtown revitalization, housing, Tax Increment Financing (TIF) district approvals, Brownfields redevelopment, and infrastructure in support of economic development.
      3. Award of bonus points in community facilities, infrastructure, and economic development grant and loan proposals (eg. Community Development Block Grants, Drinking Water State Revolving Fund) that include features that afford resilience to impacts of climate change.
      4. Reduction of local matching fund requirements for towns or multi-town regions that seek to implement climate resilience projects, whether pursuant to Comprehensive Plans, Hazard Mitigation Plans or Climate Vulnerability/Resilience Plans.
   3. Ensure State level plans are consistent with federal requirements to improve access and reduce matching requirements in federal funding programs (eg USDHS, FEMA)
5. Incentivize and reward municipalities and regions who incorporate mitigation and resilience into planning documents, local regulations, capital investment planning, and resilience staffing support.
   1. Create checklists to establish “Climate-Ready” or “Resilient Community” designations.
   2. Develop “readiness” thresholds that address equity across municipalities of varying sizes and circumstances.
   3. Recognize and incentivize regional collaboration among small municipalities in achieving “readiness”
   4. Recognize implementation of Flood Resilience Checklist as part of any bonus points program.
   5. Reward participation in National Flood Insurance Program (NFIP) and its voluntary Community Rating System[[6]](#endnote-6) to bolster community resilience and lower state financial impacts.
   6. Reward coordination of resilience objectives among communities who prioritize infrastructure improvements on a regional basis.
6. Create a clearing house for grant, loan, foundation, bond, and local finance programs and mechanisms available for resilience planning and resilience adaptation.
   1. Assemble/complete database of funding sources including grants, loans, impact or use fees, tax revenues/subsidies, revenue/obligation/investment bonds, sponsorship[[7]](#endnote-7)/stewardship for voluntary contribution[[8]](#endnote-8), market-based credit or trading, tax increment financing districts, capital improvements, insurance/reinsurance
   2. Coordinate public sector financing with private foundations to leverage funding.
   3. Align funding to priority areas and coordinate multiple sources to projects in the same area or time.
   4. Map both funded projects so they can be seen spatially/temporally to connect program managers, and technical assistance providers to highlight gaps in service
   5. Improve access to sources through targeted federal advocacy.
7. Modify existing financing mechanisms to support local adaptation projects, such as Tax Increment Financing (TIF) districts.
8. Develop new financing mechanisms (resilience, catastrophe bonds, special purpose districts, public private partnerships) to finance natural infrastructure for risk reduction[[9]](#endnote-9)
   1. Work with a consortium of New England states to access larger financial markets.
   2. Change/advocate for financing of risk-reducing resilience measures during post-disaster recovery vs. recovery to pre-disaster conditions.
   3. Deploy a “green” infrastructure bank retaining individual program independence while maximizing re-investment potential
9. Create a Maine Infrastructure Bank (alternatively, house within Maine Municipal Bond Bank) to provide municipal financing for resilience and green infrastructure. Merge existing loan funds (Clean Water, Drinking Water, Wastewater, Land Acquisition, Energy Efficiency) so that:
   1. Access is customer-centric rather than program-centric
   2. Infrastructure financing is tied to economic development (brownfields, transportation, housing) and Green House Gas mitigation (clean energy and energy efficiency)
10. or the [Rhode Island Clean Water and Green Economy Bond](http://dem.ri.gov/greenclean/), or the [Atlanta Environmental Impact Bond](https://www.atlantawatershed.org/first-publicly-issued-environmental-impact-bond/), and others
11. Seek legislative authorization to establish Climate Resilience Authorities[[10]](#endnote-10) to undertake or support resilience infrastructure projects by financing or refinancing the capital costs associated with resilience infrastructure.
12. Develop model Memorandum of Understandings among public, private and non-profit partners that establishes mutually reinforcing duties and obligations
    1. Tie membership dues (ex. trade associations), to receipt of assistance from subject matter experts.
13. Stay informed about the [Transportation and Climate Initiative](https://www.transportationandclimate.org/) (TCI) (similar to [Regional Greenhouse Gas Initiative](https://www.rggi.org/)) and learn of funding sources used by the other 12 Northeastern and Mid-Atlantic states and DC collaborating to improve transportation, develop a clean energy economy and reduce carbon emissions in the transportation sector.
14. Establish a “State Infrastructure Climate Adaptation Fund” that would allow municipalities and state agencies to access the funds needed to supplement the often-excessive local cost shares associated with large adaptation projects.
15. What is the timeframe for this strategy?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Short-term (2022) | Mid-term  (2030) | Long-term (2050) | 2070 -2100 |
| To implement | A, B, C, D, E, F, G, H, I, J |  |  |  |
| To realize outcomes | A, B, C, D, E, G, | A, C, F, H, I, J | A, C, F, H, I, J | A, C, F, H, I, J |

1. Please analyze the Recommended Strategy against the following criteria. (Each Working Group can add its own sector-specific criteria as appropriate.)

|  |  |
| --- | --- |
| **Workforce** - Will the strategy create new jobs, prevent job loss, or cost the state jobs? | Climate resilience projects create jobs from project initiation, design, construction, project management, as well as operation and maintenance. They are therefore an on-going source of employment. The loss of some jobs will be replaced by a workforce designed and adapted to a future that is different from the past (shift from fossil to renewable energy analogy). |
| **Benefits** (non-workforce) - What are the expected co-benefits of this strategy (e.g., improved health, increased economic activity, wildlife habitat connectivity, reduce natural hazard risk, increased recreation, avoided damage)? | The collaborative, unified, and regional responses recommended here will ensure more likely positive outcomes, avoidance of immediate and ongoing costs of economic and systemic disruption, and thus continuity and reduced response time to achieve normalcy after disruption.  Each plan, program, and piece of infrastructure that gets funded is more resilient and will increase resilience over time, project by project.  Regional Planning Commissions have cultivated relationships that are trusted and can deliver on behalf of multiple communities. |
| **Costs** – What are the estimated fiscal costs and other costs to carry out this program. To the state? To municipalities? What resources do you anticipate needing to inform Mainers about the strategy and the opportunity/costs of the strategy? Where would financing likely come from? | There are administrative costs associated with issuing executive orders, involving the public, and engaging state agencies around revised program criteria. The cost to State government of setting up the programs recommended likely involve additional staff in several agencies and/or additional coordinating roles for existing staff. Outreach and engagement will have costs associated with web site and printed materials, public meetings (venues, travel etc.) and facilitation.  Costs to municipalities will be limited to coordination with neighbors and regional networks of other municipalities.  National research demonstrates the cost effectiveness of paying for resilience[[11]](#endnote-11)  The costs associated with measures to make critical infrastructure, historic downtowns, housing, and the transportation system more resilient will be significantly higher than setting up the programs recommended here. However, alignment of funding criteria coupled with efficient delivery of funding sources generates and far higher benefit cost ratio when compared to the economic and systemic disruption of a “do nothing” strategy.  The financing will come from the wide variety of funding mechanisms that are the entire point of this strategy: multiple approaches from public, private and nongovernmental sources. |
| **Equity** - Is this strategy expected to benefit or burden low-income, rural, and vulnerable residents and/or communities? What outreach has been/will be undertaken to understand the impact of the strategy on front-line communities? | Those disadvantaged may include coastal residents who lose property value and their livelihoods.  The strategy addresses the limited capacity of smaller, often low income, and rural communities by encouraging and rewarding regional cooperation.  Stakeholder input has included representation from Community Action Agencies, Maine Municipal Association, and representatives from rural municipalities. |
| **Proven strategy & feasibility** – Has this strategy been implemented successfully elsewhere? Is it feasible with today’s technology? What barriers to implementation exist (e.g., financial, structural, workforce capacity, public/market acceptability)? | This strategy is not a function of technical feasibility or financial capacity. As a Funding Mechanisms strategy, it recognizes the significant financial need in attaining resilience, the existing funding limitations and COVID-19 pandemic constraints, and the need to find every available efficiency within Maine, and creative financing mechanisms within and beyond Maine’s borders.  Barriers to implementation are rooted in the extensive areas of vulnerability (developed areas along riverine corridors on the coast), assertions of property rights, expectations of compensation, and insurance programs that can induce risky choices in the face of climate impacts.  There are example strategies in Maine and several other states:   * Mass. [Municipality Vulnerability Preparedness Program](https://www.mass.gov/municipal-vulnerability-preparedness-mvp-program) * [Rhode Island Municipal Resilience Program of the RI Infrastructure Bank](https://www.riib.org/mrp) * Climate Resilience Authority model [from Maryland Senate Bill 457 (passed May 2020)](https://legiscan.com/MD/bill/SB457/2020) allowing [issuance and sale of state and local tax-exempt bonds for infrastructure projects](https://patch.com/maryland/annapolis/annapolis-resilience-finance-authority-becomes-law). * Water Resource Restoration [sponsored projects in IA](http://www.iowasrf.com/about_srf/sponsored_projects_home_page.cfm) * Fort Kent ME – decision making process around levee construction and protection; and on-going costs associated with that decision * NC – stormwater fee to address repetitive losses from flooding * NH – TDR approaches in repetitive flooding situations (needs state enabling statute) * [Case studies of innovative financing prepared by Climate Finance Advisors for the United Nations Environment Programme Finance Initiative (UNEP FI) and the Global Commission on Adaptation (GCA)](https://www.unepfi.org/wordpress/wp-content/uploads/2019/07/GCA-Adaptation-Finance.pdf) |
| **Legal authority** - Does the strategy require new statutory (legal/legislative) authority? | Legislative approval is required for Maine to join the Transportation and Climate Initiative and is also required for issuance of a climate resilience bond (similar to the Mass. Municipality Vulnerability Preparedness Program). |
| Other? |  |
| Other? |  |

1. Rationale/Background Information

\*\*Please footnote substantive disagreements among the Working Group members

1. Climate-specific interagency funding group (ex. funding program managers – CWSRF/DWSRF/Brownfield/Septic/Tanks/ 319/SHIP/CCG/HMGP/energy-efficiency/etc. and other agency programs, Environmental Protection Fund, Municipal Investment Trust Fund), [↑](#endnote-ref-1)
2. <https://www.dep.pa.gov/Business/Water/Waterways/Flood-Protection/Pages/default.aspx> and their Flood Protection Manual <http://files.dep.state.pa.us/Water/BWEW/Flood> [↑](#endnote-ref-2)
3. <https://www.maine.gov/dacf/mfs/policy_management/water_resources/stream_smart_crossings.html> [↑](#endnote-ref-3)
4. <https://www.wellsreserve.org/project/coastwise> [↑](#endnote-ref-4)
5. Resilience plans within Comprehensive Plans, Hazard Mitigation Plans, or Climate Vulnerability/Resilience Plans [↑](#endnote-ref-5)
6. Community Rating System (CRS) is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum program requirements. As a result, flood insurance premium rates are discounted to reflect the reduced flood risk resulting from the community actions meeting the three goals of the community rating system:

   1. Reduce flood damage to insurable property;
   2. Strengthen and support the insurance aspects of the National Flood Insurance Program, and
   3. Encourage a comprehensive approach to floodplain management

   In addition to the discounts on national Flood Insurance Program premiums, the CRS a great checklist that will unearth adaptation options for the municipality that lead to more resilience against flooding potential. [↑](#endnote-ref-6)
7. To finance nontraditional water-infrastructure projects, some states have created a new type of program within their CWSRFs known as “sponsorship” programs. Through sponsorship, a municipal government, water utility, or other applicant applies for a loan for a traditional water-infrastructure project and increases the loan enough to sponsor a nontraditional project.

   For example, in Ohio, a borrower applying to the Water Resource Restoration Sponsorship Program (WRRSP) for wastewater-treatment loans can either propose its own watershed-restoration project or “sponsor” a third party - such as a land trust, park district, or other entity – in doing a watershed-protection or -restoration project.

   <https://www.conservationfinancenetwork.org/2018/05/21/using-state-revolving-funds-for-land-conservation> [↑](#endnote-ref-7)
8. Stewardship Mapping or STEW-MAP answers the question: who takes care of our environment? STEW-MAP surveys civic groups who work to conserve, manage, monitor, transform, educate on and/or advocate for the environment across a defined city, region, or landscape. It is both a study of a region's civic environmental stewardship resource and a publicly available online database and visualization tool to support a range of practical applications. Leveraging stewardship capacity can be a powerful way for governments, non-profits, and other organizations to achieve outcomes that would otherwise be impossible with finite resources, and to create communities that are stronger, healthier, greener, and more resilient. Mobilizing this potential requires understanding what stewardship capacity and connections exist across a landscape, and being able to connect these to form a model of [shared stewardship](https://www.fs.fed.us/managing-land/forest-stewardship/shared-stewardship-strategy). See <https://www.nrs.fs.fed.us/STEW-MAP/> [↑](#endnote-ref-8)
9. Colgan, C. S., M. W. Beck, S. Narayan, 2017. Financing Natural Infrastructure for Coastal Flood Damage Reduction. Lloyd’s Tercentenary Research Foundation, London. [↑](#endnote-ref-9)
10. Climate Resilience Authorities allow counties, or municipalities (or multiple counties or municipalities) to finance or refinance the capital costs associated with resilience infrastructure such as flood barriers, culverts, green spaces, building elevation, and other stormwater infrastructure. The authority determines the revenue sources of the resilience authority including the use of general fund revenue and general obligation bonds and establishes the budgetary and financial procedures. The resilience authority can receive money from its incorporating local government, the state, other governmental units, or private organizations; it can charge and collect fees for its services; (with approval from the local governing body) can charge and collect fees to back its bond issuances; have employees and consultants as necessary; use the services of other governmental units. [↑](#endnote-ref-10)
11. Multi-Hazard Mitigation Council (2019.). Natural Hazard *Mitigation Saves: 2019 Report.* Principal Investigator Porter, K.; Co-Principal Investigators Dash, N., Huyck, C., Santos, J., Scawthorn, C.; Investigators: Eguchi, M., Eguchi, R., Ghosh., S., Isteita, M., Mickey, K., Rashed, T., Reeder, A.; Schneider, P.; and Yuan, J., Directors, MMC. Investigator Intern: Cohen-Porter, A. National Institute of Building Sciences. Washington, DC. [www.nibs.org](http://www.nibs.org)

    and

    National Institute of Building Sciences, Multihazard Mitigation Council, Natural Hazard Mitigation Saves: An Independent Study to Assess Future Savings From Mitigation Activities (2005), <http://c.ymcdn.com/sites/www.nibs.org/resource/resmgr/MMC/hms_vol2_ch1-7.pdf?hhSearchTerms=Natural+and+hazard+and+mitigation>. [↑](#endnote-ref-11)