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CLIMATE RESILIENCE DESIGN GUIDANCE

REGIONAL COORDINATION FORM

The Regional Coordination Form is one form in a series (that also includes the Site Suitability Form and Flexible Adaptation Pathways Form) that accompany and supplement the Climate Resilience Design Standards Tool and Climate Resilience Design Guidance. This **optional form** serves to document additional project information and encourage consideration of climate resilience in project planning and design.

A. CONTEXT

The Climate Resilience Design Standards and Guidance includes:

- **Climate Resilience Design Standards Tool**: a web-tool that provides a preliminary climate hazard exposure and risk screening and recommended climate resilience design standards for projects with physical assets within the Commonwealth of Massachusetts
- **Climate Resilience Design Guidance:** considerations, best practices, and forms to inform integration of **Climate Resilience Design Standards Tool** outputs in preliminary planning and design.

There are several forms associated with the Climate Resilience Design Guidance: Project Form, Site Suitability Form, Regional Coordination Form, and Flexible Adaptation Pathways Form. The forms are structured as follows:

Form Name	Abbreviation	Complete For…	Submission Process
Project Form	*N/A*	Project Questions: Overall Project	**Only submit** this form if the web-tool is inaccessible. Please follow instructions of your grant and other application process.
		Asset Questions: Each Asset	

Form Name	Abbreviation	Complete For…	Submission Process
Site Suitability Form	Form-SS	[Optional] Overall Project	Submit these **optional** forms as a complete package to supplement your grant application or other process.
Regional Coordination Form	Form-RC	[Optional] Overall Project	
Flexible Adaptation Pathways Form	Form-AP	[Optional] Overall Project	

B. REGIONAL COORDINATION FORM OVERVIEW

The Regional Coordination (RC) considerations are intended to help identify how resilient design and implementation can be coordinated across regions, as well as State Agencies and jurisdictions. The goal is to identify projects that can provide the most benefit to the Commonwealth and identify opportunities for collaboration and promotion of resilience. The extent of "regional" may range depending on the scope of the project to include coordination with:

- Local regions within a Municipality (neighborhood, school district, utility service area, etc.)
- Private Development/Organizations
- Multiple Municipalities
- Massachusetts Regional Planning Agencies
- Watershed Authorities
- County or Counties
- MassDOT Districts

- MEMA Regions
- State Agency Climate Change Coordinators
- Neighboring States (NH, RI, CT, VT, NY)
- Federal Agencies (USACE, FHWA, FEMA, etc.)
- Others

Stakeholder Engagement: Project Managers should engage with stakeholders across sectors of infrastructure, environment, and society, to establish a more integrated plan of action for community resilience. This type of engagement allows for a more informed understanding of the context and effects as well as provides an opportunity to create a more resilient plan. This may also include a social vulnerability assessment, which is recommended for projects that provide services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations. By incorporating knowledge and insights from a variety of stakeholders throughout design and implementation phases, the overall process becomes more inclusive and ultimately drives toward more equitable outcomes.

Users should evaluate Regional Coordination early in the design process, following Site Suitability and the Outputs from the Tool. The Regional Coordination best practices focus on actions recommended to identify regional considerations and partnerships, including to assess the regional context of vulnerability, evaluate impacts beyond site-specific design, optimize capital investment opportunities, and prioritize services and assets that serve vulnerable populations.

The Regional Coordination Form (Form-RC) is an optional form and recommended for completion as part of the Climate Resilience Design Standards and Guidance process.

The Regional Coordination considerations and questions are structured into four best practices:

RC-1. Assess regional context of vulnerability
RC-2. Evaluate impacts beyond site-specific design
RC-3. Optimize capital investment opportunities
RC-4. Prioritize services and assets that serve vulnerable populations

C. FORM QUESTIONS

Provide the responses to the following questions related to the **overall project** to the best of your knowledge. The Regional Coordination best practices provide a framework for responding to the questions in conjunction with the project outputs of the Tool.

RC-1 Assess regional context of vulnerability.

There may be regional projects that would reduce the exposure and risk rating for the project and assets. The project may also serve to provide regional climate benefits. The preliminary Climate Risk Screening Output (from the Tool) does not serve as a risk and vulnerability assessment. If the exposure and risk ratings are moderate or high, it is encouraged that the project owner evaluate existing regional plans and vulnerability assessments. The existing plans may also identify other regional projects that may provide benefits such as flood protection, upland stormwater storage, etc. If no existing studies are available, and the project owner should consider conducting a formal risk and vulnerability assessment, including an assessment of social vulnerability.

- *Example Best Practice*: FEMA's Building Resilient Infrastructure and Communities (BRIC) Program Webpage
- *Practice Relevance:* The FEMA established BRIC program is the new pre-disaster mitigation program that supports states, local communities, tribes, and territories to reduce risks from disasters and natural hazards. The webpage features resources and guiding principles to build the capability and capacity of communities, **promote regional partnerships**, and enable large projects. This program emphasizes nature-based solutions and provides grant opportunities to improve community resilience.

- *Example Best Practice*: Mystic River Watershed Association – Regional Mystic Collaborative Webpage
- *Practice Relevance*: The Mystic River Watershed Association is spearheading the Regional Mystic Collaborative, which **coordinates efforts across 18 cities and towns** with the recognition that climate change and associated impacts cannot be solved by a single municipality or project and will take a full watershed approach. The webpage features a map that links to each town's Municipal Vulnerability Preparedness plan and municipal members.

- *Example Best Practice:* Charles River Watershed Association (CRWA) – Building Blue: Framework for a Healthy Charles - Collaboration Webpage
- *Practice Relevance:* The CRWA's Building Blue Framework provides a set of guidelines and best practices for developers, designers, and stakeholders, to encourage **sustainable development in a regional context**. This website provides examples of local and regional collaboration projects.

- *Example Best Practice*: Narragansett Bay Commission Green Stormwater Infrastructure – PowerPoint Presentation PDF
- *Practice Relevance*: In collaboration with the Blackstone Needs Assessment, through the Narragansett Bay Estuary Program, the Narragansett Bay Commission has initiated a collaborative effort to construct green stormwater infrastructure Combined Sewer Overflows (CSOs) and athletic facilities. This initiative highlights **enhanced regional resilience efforts** to improve stormwater management, water quality, flooding, and community quality of life.

RC-1 QUESTIONS

RC-1.1 Does this site provide or contribute to regional climate resilience?
Click or tap here to enter text.

RC-1.2 Are there existing climate vulnerability or risk assessments available for the area?
☐ Yes ☐ No

RC-1.3 Are there any regulatory challenges/loopholes complicating coordination? ☐ Yes ☐ No

If yes, identify those complications. Click or tap here to enter text.

RC-2 Evaluate impacts beyond site-specific design.

Due to the interconnected nature of natural and manmade systems, the project owner should evaluate the off-site effects of a proposed project on the region to avoid unintended consequences and maximize benefits. Additionally, the project owner should understand other proposed projects in the region and potential impacts/benefits to their project.

- *Example Case Study*: Draw 7 Park Flood Barrier, Somerville, MA
- *Case Study Relevance*: Located at the mouth of the Mystic River watershed and adjacent to the Amelia Earhart Dam (AED), this site is a demonstration of regional coordination in practice. The project scope includes park improvements, flood protection, and a living shoreline. Through climate vulnerability assessments prepared for the City of Cambridge, the site was identified as a critical flood pathway for the Cities of Cambridge and Somerville due to flanking of the AED. The height of the flood protection and alignment was coordinated with proposed AED improvements to leverage this opportunity to coordinate implementation and construction. This resulted in a higher design flood elevation than originally planned on the site to coordinate efforts with larger regional protection strategies.

- *Example Best Practice:* Increasing Regional Flood Resiliency Through Re-designing Culverts in the Howlett Brook Watershed - Technical Report PDF
- *Practice Relevance:* This comprehensive regional culvert design project in the Howlett Brook sub basin of the Ipswich River Watershed, was a collaboration between the Ipswich River Watershed Association, the Town of Boxford, and the Towns of Topsfield and Ipswich. Preliminary hydrologic and hydraulic models were developed to analyze current and future stream flows and regional flood impacts. The project provided 30% design plans and cost estimates for 13 priority sites based on the Mass Stream Crossing standards and future modeled climatic conditions. Such resources positioned the three municipalities to

pursue and advance the designs to permit level and eventually implementation, for increased regional flood resilience, reduced community risk, and restoration of natural habitats.

- *Example Best Practice:* Rural Dirt Road Resilience: Assessment, Pilot Study, and Recommendations Report - Sheffield, Sandisfield, New Marlborough - Webpage
- *Practice Relevance:* Many of the main roads within Sheffield, New Marlborough and Sandisfield are used as regional evacuation, emergency, or school bus routes. These communities are working together on vulnerability assessments to support regional recommendations for improvements, including natural based solutions. This project includes community outreach, education, and engagement efforts.

RC-2 QUESTIONS

RC-2.1 What are the off-site impacts of the project?

RC-2.1.1 Off-site unintended consequences? (For example, harm to natural resources, public health and safety, downstream erosion/scour, etc.)
Click or tap here to enter text.

RC-2.1.2 Off-site benefits? (For example, provides emergency services for response and/or recovery, encourages economic development, improves public health and safety, improves natural resources, etc.)
Click or tap here to enter text.

RC-2.2 Are there regional characteristics, physical or regulatory, that affect the ability of a project to meet the recommended standards? (For example, location in watershed, municipal ordinances, etc.) ☐ Yes ☐ No

If yes, identify and describe. Click or tap here to enter text.

RC-2.3 How will the project impact other regional projects?

RC-2.3.1 Are there on-going or planned regional projects that will affect or benefit the project site? ☐ Yes ☐ No
If yes, identify the project(s), lead organizations, and describe briefly. Click or tap here to enter text.

RC-2.3.2 Are there alternatives proposed in the project design if those regional projects are not advanced? ☐ Yes ☐ No
If yes, identify and describe. Click or tap here to enter text.

RC-3 Optimize capital investment opportunities.

Design and implementation efforts should leverage planned state or local investment. This provides an opportunity to coordinate plans and priorities during the design phase and identify projects that provide many resilience benefits. These opportunities may be identified in existing climate risk and vulnerability assessments (see RC-1).

- *Example Best Practice*: Main Street Roadway Raising, Charlestown Boston, MA – Webpage
- *Practice Relevance*: Through the Climate Ready Boston Charlestown Phase I project in 2017, a major near-term flood pathway was identified through the Schrafft's Center in Charlestown. Flood protection through 2030 for over 250 residents and 60 businesses could be achieved by elevating the roadway (Main Street) by an average of 2 feet. Roadway improvements were also planned as part of the ongoing Rutherford Avenue and Sullivan Square redesign project. Feasibility of raising the grades of Main Street is being evaluated as part of the on-going roadway improvements project.

RC-3 QUESTIONS

RC-3.1 Are there additional planned or on-going regional projects that could result in mitigation of climate impacts for this project? ☐ Yes ☐ No

If yes, identify these planned or on-going projects and the benefit to the project.

Click or tap here to enter text.

RC-3.2 Are there opportunities that would provide more regional benefit for resilience investment than if site-specific improvements to meet the standards are made alone? (For example, flood barrier near the point of origination, upgradient stormwater management, etc.) ☐ Yes ☐ No

If yes, identify these opportunities and the benefit to the project.

Click or tap here to enter text.

RC-3.3 What funding is available for the project to meet the recommended climate standards?

Click or tap here to enter text.

RC-4 Prioritize services and assets that serve populations in Environmental Justice neighborhoods and climate vulnerable populations.

Standard practice concentrates efforts to provide value to the greatest number of users. Prioritizing investments that serve populations in Environmental Justices neighborhoods or climate vulnerable populations contributes to building broader social resilience. Projects should evaluate the effects as well as benefits related to equity during design decisions. To get a better sense of the effects and benefits, the process should include opportunities for community participation and capacity building practices.

- *Example Best Practice:* Evaluate additional impact to vulnerable populations (Research Paper)
- *Practice Relevance:* This journal article adds to the literature regarding the disproportionate exposure and risk vulnerable populations face during emergencies and contributes to practice through the development of a tool, the Social Determinants of Vulnerability Framework. It identifies seven different social factors that drive vulnerability. It provides a quantitative analysis of social factors based on City of Boston data.

- *Example Best Practice:* Connected Communities Guidelines - PDF
- *Practice Relevance:* In coordination with New York City Housing Authority and NYC Planning department, the practical guide provides specific community engagement, open space design, and building preservation techniques for NYCHA campuses, yet generalizable to other contexts. The focus of the guide is that quality design can better connect residents to one another and to their surrounding community through different benefits. It identifies four main elements: community engagement, safety and security, health and resilience, and maintenance and operations. Through easy-to-understand and compelling graphics, the document goes further to provide checklists and tools.

- *Example Best Practice:* NJ 2020 "A Seat at the Table: Integrating the Needs and Challenges of Underrepresented and Socially Vulnerable Populations into Coastal Hazards Planning in New Jersey" – PDF
- *Practice Relevance:* In coordination with the New Jersey Coastal Zone Management Program and the New Jersey Department of Environmental Protection, this Rutgers University report provides an overview of the impacts of climate change and subsequent coastal hazards on vulnerable populations. The report discusses opportunities that address the needs of and integrate the engagement of vulnerable populations in coastal community resilience planning and coastal management policy efforts.

- *Example Best Practice:* The City of Providence's Climate Justice Plan: Creating an equitable, low-carbon, and climate resilient future – Report PDF
- *Practice Relevance:* Established in collaboration with City of Providence's Office of Sustainability and frontline communities, this climate action plan provides guidance for integrating pollution reduction across the buildings and transportation sectors with regional inequities to climate change. Resources included in this plan target climate justice issues, governance and

accountability, community health, strong economic systems, and clean energy. It demonstrates a concentrated effort by the City of Providence to improve social and climate resilience in a connected manner.

- *Example Best Practice*: Urban Sustainability Directors Guide to Equitable, Community-Driven Climate Preparedness Planning – PDF
- *Practice Relevance:* As the title suggests, this guide encourages communities to integrate climate preparedness and adaptation guidance with an emphasis on adaptation solutions specific to equity issues, and provide strategies for more inclusive community engagement, into design and planning for climate resilience.

RC-4 QUESTIONS

RC-4.1 Does the project provide essential services to populations in Environmental Justice neighborhoods or climate vulnerable populations? ☐ Yes ☐ No

If yes, describe. Click or tap here to enter text.

RC-4.2 How does the project promote social resilience and equity? Click or tap here to enter text.

RC-4.3 Could the site support emergency preparedness, response, or recovery efforts? ☐ Yes ☐ No

If yes, describe. Click or tap here to enter text.