Draft Integrated Work Plan for LISS Working Group

February 2021

Table of Contents

I. Introduction

The work plan for the Sustainable and Resilient Communities working group will be organized around five priorities, expressed as Outcomes:

1. Better coordinated regional response
2. Better trained community decision makers
3. Infrastructure improvements planning
4. Viability of government services
5. Facilitated implementation

For the purpose of this work plan, the term "input" refers to the capacity provided by staff, or information generated, in support of work plan activities to be undertaken by the Working Group. For example, the hiring of circuit riders (input) would be key to the development of training programs (task).

The term "tasks" refers to specific efforts, such as holding workshops or developing training programs, in direct support of work plan outputs, such as the delivery of training programs.

The term "output" means an environmental activity, effort, and/or associated work products related to an environmental goal or objective (summarized here under "outcomes"), that will be produced or provided over a period of time or by a specified date. For example, the delivery of training programs would be an output in support of better trained decision makers as an outcome.

The term "outcome" is defined as the result, effect or consequence that will occur from carrying out an environmental program or activity that is related to an environmental or programmatic goal or objective. For example, better trained decision makers as a result of the delivery of training programs (output) developed (task) by the circuit riders (input). Outcomes may be environmental, behavioral, health-related or programmatic in nature.

The term "benefits" refers to the overall impact of the work plan outcomes. The plan refers to both societal benefits (such as more resilient communities) and environmental benefits (such as enhanced habitat as a result of restoration of tidal marshes), that are broadly aligned with several of the ecosystem targets of the Long Island Sound Study CCMP (see below section on *Alignment with the CCMP*, more specificity will be detailed and documented as the implementation of the work plan matures and specific programs/projects are rolled out).

Each Outcome will be achieved cumulatively by completing a number of Outputs, which will in turn require the completion of a series of smaller Tasks. The work plan will be formatted as follows:

1. *Outcome 1*
    a. *Output A*
        i. *Task i*
        ii. *Task ii*
    b. *Output B*

        i. *Task i*
        ii. *…*
2. *Outcome 2*
    a. *Output A*
        i. *Task i*
        ii. *…*

See the draft work plan outline containing all Outcomes, Outputs, and Tasks below. Note that the needs assessment that will be developed separately will inform most/all Outcomes, Outputs and associated Tasks. At present, the Outputs for all of the Outcomes contain significant redundancies when evaluated together. However, this is intentional and means to capture the synergies and cross-cutting elements between the different parts of the work plan (see Figure 1 below).

Draft Work Plan Outline

1. **Better coordinated regional response**
    a. Shared lessons learned
        i. Hold annual workshops
    b. Shared approaches/services
        i. Hold workshops
        ii. Develop and maintain a clearinghouse of tools and resources
        iii. Improve the coordination among levels of government
    c. Training programs/technical support
        i. Develop and maintain a clearinghouse of tools and resources
        ii. Create training programs to improve the use of existing tools
        iii. Improve the coordination among levels of government

2. **Better trained community decision makers**
    a. Training programs/technical support
        i. Develop and maintain a clearinghouse of tools and resources
        ii. Create training programs to improve the use of existing tools
        iii. Improve the coordination among levels of government
    b. Compound flood risks education/outreach
        i. Support a compound flood risk modeling initiative

3. **Infrastructure improvements planning**
    a. Training programs/technical support
        i. Develop and maintain a clearinghouse of tools and resources
        ii. Create training programs to improve the use of existing tools
        iii. Improve the coordination among levels of government
    b. Compound flood risks education/outreach
        i. Compound flood risk modeling
    c.
        i. Project pipeline

4. **Viability of government services**
    a. Training programs/technical support
        i. Develop and maintain a clearinghouse of tools and resources
        ii. Create training programs to improve the use of existing tools
        iii. Improve the coordination among levels of government
    b. Compound flood risks education/outreach
        i. Support a compound flood risk modeling initiative

5. **Facilitated implementation**
    a. Training programs/technical support
        i. Develop and maintain a clearinghouse of tools and resources
        ii. Create training programs to improve the use of existing tools
        iii. Improve the coordination among levels of government
    b.
        i. Project pipeline
    c. "Break down barriers" program
        i. Understand barriers to implementation
        ii. Project pipeline

The work plan is designed to capture the interconnectivity between the Tasks, Outputs, Outcomes and Benefits, as depicted in the modeled integrated work plan (Figure 1).

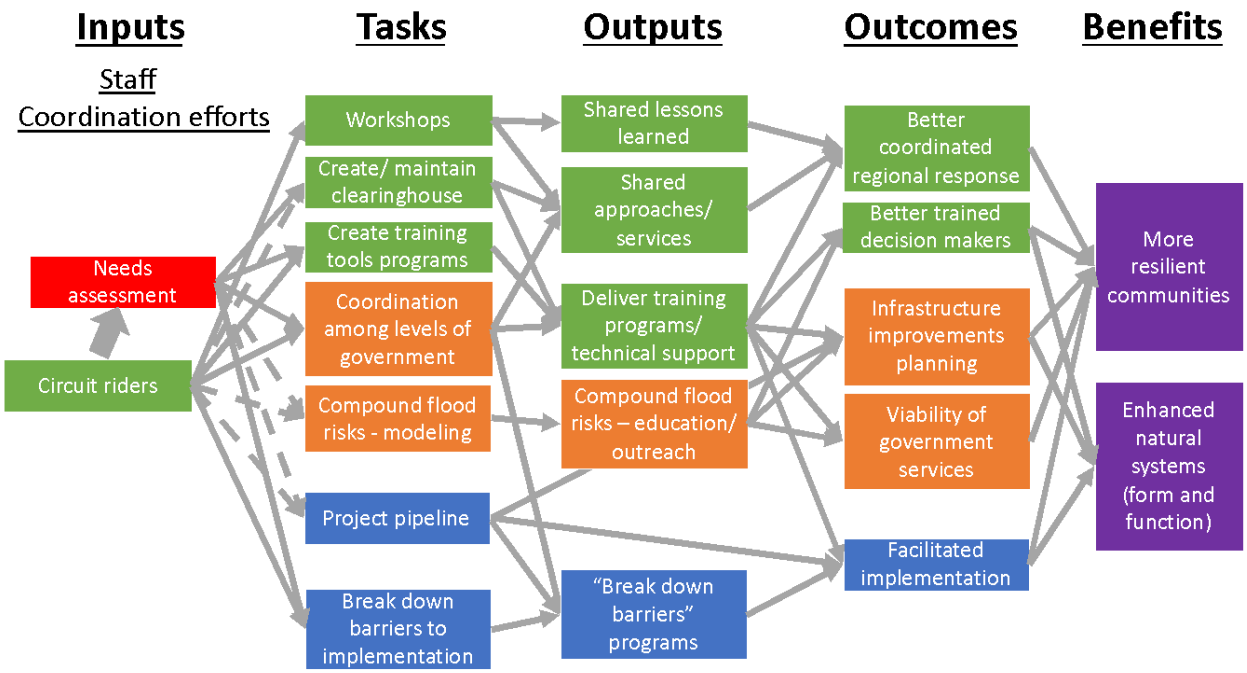

Figure 1: Interconnectivity among Tasks, Outputs, and Outcomes contributing to societal and environmental Benefits.

II. Definitions, Principles and Desired Attributes

1. Definitions

The Long Island Sound Study Comprehensive Conservation and Management Plan (LISS CCMP) lays out four themes. Theme 3, Sustainable and Resilient Communities, is the general focus of this working group. Here we will define a "Sustainable and Resilient Community" for the benefit of our working group members in order to guide our efforts.

Sustainable

The National Environmental Policy Act (NEPA) defines a sustainable system as one which seeks to "create and maintain the conditions under which humans and nature can exist in productive harmony to support present and future generations."

The U.S. EPA has further described how a comprehensive approach to sustainability is built on the "Three Pillars" of social, environmental, and economic dimensions of sustainability. Integrating sustainability into decision-making means furthering all three pillars as much as possible at the same time, with an understanding that economic sustainability is built on social sustainability, which in turn is built on ecological sustainability.

In the creation of a work plan for Theme 3 of the CCMP, we plan to use a modified version of the EPA "Three Pillars" definition to guide our thinking on sustainability (see Figure 2).

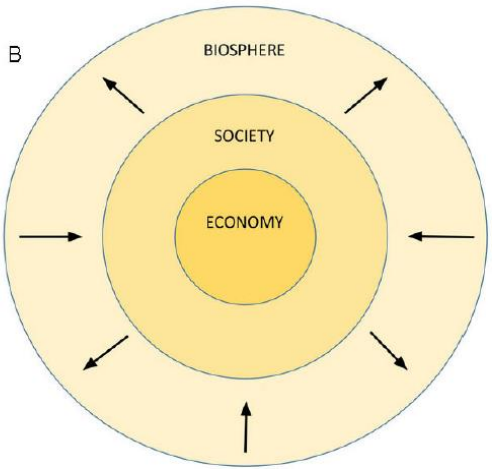

Figure 2
In our modified understanding of the "Three Pillars" definition of sustainability, the economic "pillar" is understood as depending on and operating within society, which in turn depends on and operates within the biosphere. Our definition of sustainability takes this understanding of social-ecological systems, in which the economy and society must operate within the constraints of the biosphere. (Figure source: Folke et al. 2016)

Resilient

The IPCC defines resilience as "the ability of a system and its component parts to anticipate, absorb, accommodate, or recover from the effects of a hazardous event in a timely and efficient manner, including through ensuring the preservation, restoration, or improvement of its essential basic structures and function" (IPCC 2018).

The concept of "social-ecological resilience" accounts for how human systems are embedded within, and inextricable from, the biosphere. General resilience in social-ecological terms is defined as the capacity of social-ecological systems to adapt or transform in response to unfamiliar, unexpected events and extreme shocks (Folke et al. 2016).

Specifically in the context of the coastal environment, resilience can be thought of as the capacity of social-ecological systems in the coastal environment "to cope with disturbances, induced by factors such as sea level rise, extreme events and human impacts, by adapting while maintaining and improving their essential functions from their initial states" (adapted from Masselink and Lazarus 2019).

Sustainable and Resilient Community

Therefore, a Sustainable and Resilient Long Island Sound Community is one which takes the necessary steps to ensure that the social-ecological systems in which it is embedded are able to anticipate, absorb, accommodate, and recover from the effects of disturbances (including those induced by factors such as sea level rise, storms and other extreme events, and human impacts) in a timely and efficient manner, including through ensuring the preservation, restoration, or improvement of essential structures and functions, all while achieving social, environmental, and economic well-being for all.

This means that a community must first identify the social-ecological systems in which it is embedded, determine the "essential structures and functions" of those systems, identify which disturbances are likely threaten those essential functions, define the targeted set points of "preservation, restoration, or improvement" for those essential structures and functions, and define what well-being looks like for its inhabitants.

2. Principles

Geographic scope

The geographic scope of the work plan is the Long Island Sound coast and watershed (as it pertains to the health of the Long Island Sound).

Criteria for Sustainable and Resilient Communities Work Plan

In order to be part of the work plan, an element **must**:

1. Help advance one or more of the selected CCMP Objectives
2. Be relevant to Long Island Sound, coasts and/or watersheds

3. Be complementary, and not duplicative, of existing efforts
4. Strive for synthesis among existing efforts and newly identified needs (gaps)
5. Be completed or implemented within the 5-year work plan period
6. Fit within a potential total work plan budget request of ~$1M/year

3. Desired Attributes

Elements of the work plan should be:

- Strategic
- Focused
- Collaborative
- Identifiable to LISS
- Transparent and inclusive

III. Alignment with the CCMP

This work plan aligns with the following elements of the LISS Comprehensive Conservation and Management Plan (CCMP), with 2020 updated Implementation Actions:

3-3 OUTCOME: POLICY MAKERS, RESOURCE MANAGERS, AND OTHER STAKEHOLDERS HAVE THE INFORMATIONAL RESOURCES TO UNDERTAKE COLLABORATIVE EFFORTS TO RESTORE AND PROTECT THE SOUND.

Objective 3-3a: To ensure that policy makers, environmental professionals, health professionals, and other stakeholders have the best available information in order to make decisions that will improve the management of Long Island Sound:

Strategy 3-3a1: Support the dissemination of the best practices to reduce contaminants, improve water quality, and protect habitats through professional development training and workshops.

• SC-20: Provide support to municipalities on low-impact development and green infrastructure.

3-4 OUTCOME: NEW AND EXISTING DEVELOPMENT IS SUSTAINABLE AND RESILIENT.

Objective 3-4a: To **encourage and facilitate the development** of regional, state, and local sustainability, mitigation, and resiliency plans and integrate them into community comprehensive plans:

Strategy 3-4a1: Provide **support to municipalities** to facilitate the development and updating of sustainability and resiliency plans that incorporate current concepts on these topics.

• SC-23: Develop tools (e.g. training modules, websites, regulations, best practices, etc.) and conduct region-wide and town-specific workshops to assist municipalities in the development of sustainability and resiliency plans and their integration into comprehensive plans.

• SC-24: Support community development, adoption, and implementation of new or updated Municipal Sustainability Plans and Coastal Resiliency Plans.

Objective 3-4b: To develop and implement sustainability and resiliency plans for new and existing development, housing, transportation, emissions control, energy efficiency, and job creation programs for all municipalities:

Strategy 3-4b2: Provide technical assistance and training for homeowners, municipal officials, developers, engineers, and consultants on sustainability, adaptation, and resiliency concepts and opportunities for implementation.

• SC-30: Implement standards, best practices, and educational materials for Green Infrastructure/Low-Impact Development planning and implementation.

4-3 OUTCOME: IMPLEMENTATION IS ADAPTED AND IMPROVED THROUGH THE APPLICATION OF NEW INFORMATION AND KNOWLEDGE.

Objective 4-3a: To frame sustainability, adaptation, and resilience in relation to the drivers of ecosystem change:

Strategy 4-3a1: Include important environmental drivers (e.g., climate change) in all relevant management planning initiatives.

• SM-26: Incorporate climate change-driven factors such as temperature, acidification, and sea level rise in model applications to assess factors that can influence future attainment of water quality standards and habitat protection and restoration goals.

• SM-27: Determine how climate change will impact attainment of CCMP Ecosystem Targets, goals and objectives using LISS vulnerability assessment and other resources.

While the work plan discussions were bounded by the specific outcomes, objectives, strategies and implementation actions listed above, it is clear that there will be additional environmental benefits to natural systems emerging from the specific actions to be implemented. For example, the potential for a community to enhance culverts for improved drainage will at the same time enhance habitat connectivity and water quality. While the specific environmental benefits can't be precisely predicted at this time, they will be observed and documented over the time of the implementation of this work plan.

IV. Outcomes (Thematic and Functional Priorities)

The Working Group identified five priorities, articulated as Outcomes, that will support the overall goal of Sustainable and Resilient Communities.

1. Coordinated regional response

Long Island Sound communities need additional support in order to implement practices, policies and tools related to land use, climate adaptation planning and implementation, water

quality management and habitat protection. However, organizational support for regional planning is not distributed uniformly across regions. Connecticut has a strong home rule culture, with 169 independent towns and disempowered county governments leading to a lack of coordination above the municipal level. However, in New York, county governments have substantial power and New York City has its own incredible infrastructure and resources. Communities and municipalities must have opportunities to learn from one another, share lessons learned, and consider sharing practices or perhaps even sharing resources.

Effective coordination across the region will draw on the completed needs assessment and involve several of the work plan tasks, such as maintaining the clearinghouse of tools and resources, improving coordination between levels of government, and increased coordination with funding and regulatory agencies. Training programs to improve the use of existing tools should also be designed with regional coordination in mind, and an understanding of barriers to implementation should also include an understanding of the challenges of regional coordination.

2. Trained community decision-makers

In recent years, resources have been directed toward development of technical tools that illustrate and assess the effects of sea level rise, storm surge, and vulnerability for a variety of resilience topics (e.g. heat sensitivity, coastal and inland flooding, living shorelines, critical infrastructure). However, many of these tools are underutilized due to users' lack of awareness about their availability and/or lack of knowledge about how to use them effectively to improve and inform decision making, resilience planning and project design at appropriate and multiple scales. Decision-makers and other users should be trained in order to take advantage of these technical planning tools which already exist.

Many elements of this work plan are designed to help improve the training of decision-makers and help them make use of planning tools and materials. The needs assessment can inform training needs for existing tools, while the clearinghouse can both inventory existing tools and be a place to "store" or catalog them for easy access. Circuit riders and workshops/webinars can provide mechanisms to deliver training. However, additional training materials and modules will be needed to be developed. Those materials could include: guides, YouTube videos, webinars, workshop materials, story maps, etc. to provide both self-paced and real-time tutorials for decision makers. Decision-makers include municipalities, COGs, state agency staff; communities refer to stakeholder groups (industry, conservation) or engineers and contractors.

The project "pipeline" provides an opportunity to integrate tools into assessment and design. Moreover, integrating tools into project design and development can provide opportunities for learning through case studies of tool application. Training decision-makers to use existing and new tools helps move projects from the planning to the implementation stage and advances the work plan goal of "flipping the pyramid".

3. Plan infrastructure improvements

Climate change has accelerated rates of sea-level-rise (SLR) in our area with medium to high projections of 34-75" by 2100[1]. In addition, climate change has increased precipitation throughout our area since 1900, with precipitation expected to increase in the future with more frequent storm events and heavier downpours[2]. These changes are likely to have a dramatic impact on coastal infrastructure. Infrastructure can be defined as the components of the built environment that provide services to the public: transportation systems (roads, rails, bridges), utilities (above and below ground/water), drainage systems (sewers and culverts), water supply (aqueducts, wells, tanks), wastewater treatment facilities (septic systems, WWTP), port facilities and marinas, water control mechanisms (culverts, dams), and energy generation and transmission grids (electric, natural gas, pipelines, cables). Under the current climate scenario, coastal infrastructure is increasingly vulnerable to damage from rising sea levels and increased storm frequency and severity, and associated rising water tables, with particular concern for subsurface and drainage infrastructures. Federal, state, and local agencies must manage and plan for these predicted changes through infrastructure improvements that accommodate and allow for rising sea levels and increased precipitation.

This priority will be informed by the needs assessment and compound flood risk modeling, and implemented by effectively communicating and coordinating with federal, state, and local agencies to manage and plan for infrastructure improvements which will address and accommodate coastal hazards.

4. Viable government services

Greenhouse gas emissions are causing global temperatures to rise, amplifying various climate change effects including sea level rise (SLR) and increasingly intense and frequent storms. These changing environmental conditions can cause harms to coastal communities by driving erosion, flooding, and damage to properties, developments, and infrastructure. There is a need for coastal communities to adapt and combat these coastal hazards. To do this, the delivery of municipal and other government services must be reassessed to effectively accommodate these coastal hazards.

In 2019, the LISS Vulnerability Assessment Outreach[3] was developed to summarize feedback from Long Island Sound experts on the scoping reports focusing on climate change vulnerabilities for the EPA's National Estuary Programs (NEP) in the northeast from Maine to New York. The report reviewed and analyzed existing data to create a risk-based climate change vulnerability assessment, which included consequence/probability matrices for four EPA goal areas: pollution control; habitat; fish, wildlife and plants; recreation and public water supplies (Battelle 2016). Using the results from this report, an important next step for LISS to undertake would be to evaluate and reassess socio-economic services that are exposed to coastal hazards.

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[1] New York State Department of Environmental Conservation. Community Risk and Resiliency Act. Part 490: Projected Sea-level Rise - Express Terms. https://www.dec.ny.gov/regulations/103877.html

[2] US Global Change Research Program. 2018. Fourth National Climate Assessment. "Chapter 18: Northeast." https://nca2018.globalchange.gov/chapter/18/.

[3] Juliana Barrett. 2019. Long Island Sound Study Vulnerability Assessment Outreach. https://longislandsoundstudy.net/wp-content/uploads/2019/09/LISS-VA-Final-Report-Appendices-A-C-and-E.pdf

These services may include first responders, law enforcement, operational (USDA food distribution, mail and freight services, etc.), construction, and education. The assessment should also consider the conservation and preservation of ecological functions and natural processes. Additionally, the assessment should include management response scenarios for site-specific coastal communities, and future projections of the viabilities of these services.

Once the assessment is completed, dissemination of the results is a critical component of this element to ensure that communities have all the information they need to protect themselves from coastal hazards. To do this effectively, a program could be developed to which communities in the LIS coastal watershed boundaries could apply in order to work with experts to incorporate the assessment results into their sustainability and resiliency plans, or receive assistance in developing implementation plans. It is important to note that, for some communities, analysis may reveal that it is not economically and environmentally feasible to continue providing municipal services. In those cases, these communities would need to highly consider more extreme approaches such as buy-outs and/or retreats. Additionally, municipal services may be maintained in the short term but not in the long term in the face of climate change implications, meaning that communities may have to consider alternative long-term solutions (i.e., evacuation). It is important to ensure communication about these results is provided to under-served and otherwise marginalized communities, as they may be at greater risks for coastal hazards (Nishiura et al. 2020).

This priority will be informed by the needs assessment, which will include an assessment of the future viability of governmental and municipal services in communities that are exposed to coastal hazards, as well as the design and implementation of training programs that will effectively coordinate and communicate the assessment results, and provide technical assistance to these communities.

5. Facilitate implementation of LIS sustainability and resiliency projects

Many Long Island Sound communities have developed sustainability and resiliency plans, and hundreds of potential sustainability and resiliency projects have been identified (see list below). However, the current rate of implementation is not sufficient to match the pace of the challenges impacting the Sound and its communities. Meeting existing and emerging challenges to the Sound requires implementing and sharing new approaches to innovative, complex, large-scale and/or regional projects with the potential for greater environmental and social benefit.

Moving sustainability and resiliency projects from plan to implementation will require the integration of several work plan tasks, notably including the creation of training programs and improved coordination between various levels of government, increased flexibility and availability of various funding sources overseen by regulatory agencies.

Existing lists of catalogued projects and project plans:

- CT Regional Resilience Project, TNC
- Resilient CT, CIRCA
- Sustainable CT
- NY Climate Smart Communities

- CT Governor's Council on Climate Change
- Community Risk and Resiliency Act (CRRA)
- Model Local Laws to Increase Resilience
- NY DOS Geographic Information Gateway
- NY Climate Change Science Clearinghouse
- NY DOS Basic Land Use Tools For Resiliency

V. Work Plan Tasks

The work plan will be completed by way of the following tasks, most of which will be informed by the initial needs assessment. Collectively, those tasks will support the five Outcomes of the plan.

1. Needs assessment

The working group felt strongly that the work plan should be informed by a thorough needs assessment to assure that delivery of information and services matches on-the-ground stakeholder needs. A five-step needs assessment process was developed in order to meet these requirements.

Task 1: Gap analysis: identify knowledge gaps and priorities for assessment (using knowledge learned from LISS SRC element teams as well as from other needs assessments)

1. Identify key elements of resiliency that all communities should have (i.e. conduct resiliency inventory and planning)
2. Work with other work plan focus areas/elements to identify what needs to be included in the needs assessment (i.e. what information is missing to enable effective implementation of WG plans)
3. Initial review of existing needs assessments that have already been completed (e.g. CSC in NY; CIRCA, CTSG and CLEAR in CT)
4. Identify needs assessment areas of focus

Task 2: Define the targets of the assessment (whose needs the assessment will measure; create a list of communities and appropriate contacts, e.g. community leaders)

1. Define which types of audiences to target (e.g. towns, municipalities, grassroots community groups)
2. Ensure that the full diversity of communities is included.
3. Define the "who"—which communities to work with and talk to
4. Ensure underrepresented communities are included

Task 3: Define implementation partners and available resources they can contribute.

1. Create a comprehensive inventory of implementation partners (e.g. federal, state, and local agencies, academic institutions, and NGO partners (e.g. FEMA, CIRCA, Department of State, TNC))
2. Identify the resources that partners can bring to connect with communities and

municipalities
3. Get buy-in and commitment from implementation partners to provide those resources

Task 4: Design and implement the assessment: create a completed assessment to distribute and implement

1. Design assessment
    a. Incorporate information gathered from previous tasks to develop survey
        i. Avoid duplicating efforts from preexisting surveys/needs assessments identified in gap analysis
        ii. Include information needs from other work groups
    b. Define research questions
    c. Define survey mechanism (e.g. online form; interviews)
2. Conduct assessment
    a. Reach every identified community to ensure we have sufficient coverage and participation

Task 5: Analyze the assessment results: The goal is to reach an informed perspective on the needs and information that communities are lacking and use it to inform work plan implementation efforts; analyze, synthesize, and publish.

1. Information on what to address/tools to use available for LISS SRC work plan implementation
2. Compile Data, Formulate Recommendations for SRC
3. Monitoring Utility of Original Recommendations

Task 6: Monitoring and Evaluation

1. Develop needs assessment monitoring and evaluation approach
2. Update assessment findings as appropriate based on subsequent fieldwork and implementation.

Deliverables:

- Task 1: Review existing studies with overlapping data; conduct a gap analysis identifying information gaps and priorities for this needs assessment.
- Task 2: Make a list of target communities to assess and the appropriate contacts within each community/group (e.g. community leaders)
- Task 3: Comprehensive inventory of relevant implementation partners and resources to connect with target communities/municipalities
- Task 4: Needs assessment designed and distributed (e.g. via LISS and/ or assessment implementation partner—agencies, NGOs, etc); assessment implemented and responses received.
- Task 5: Analysis report of assessment results containing perspective on the needs of communities and the information they need to facilitate work plan implementation.
- Task 6: Process to monitor and evaluate ongoing relevance of needs assessment results.

Target audience:

- Towns, municipalities, grassroots community groups
- LISS (including other SRC element implementation teams)

Partners:

- Agencies, NGOs, academic institutions; community organizations (plus various LISS partner entities that may take ownership or leadership over task implementation)
- With guidance from the partners, the circuit riders will take primary responsibility for this task. This will allow their introduction in the local landscape and players, an opportunity to build trust, and continuity from the needs assessment to program roll out.

Timeline:

- Mostly year 1
- Some monitoring/evaluation in years 2-3.

Resources:

- ~$160,000 for coordination and project oversight originally planned. Support for the circuit riders will be essential for this task.

2. Hold annual workshops

Rationale/relevance:

- LIS communities need support to implement practices, policies and tools related to land use, climate adaptation planning/implementation, water quality management and habitat protection.

Objectives:

- Host Annual Bi-State workshop to encourage activity:
    - Share experiences
    - Demonstrate tools
    - Provide in-house grant information and writing support
    - Provide "credits" to increase participation
    - Model the annual summit after the RASCL (derascl.org) Summit, very successful, municipalities attend, and they have planners/grant programs available for "office hours" (their sponsors might give us ideas for resources/match/QAPP).
- Evaluate the utility of existing tools using municipal staff as reviewers
- Identify needs of underserved communities and neighborhoods
- Create communities of practice around specific issues, coordinated by circuit riders to foster communication and action across municipal lines.
- Circuit riders coordinate bi-state efforts to exchange information and encourage cross pollination through continued and ongoing dialogues.

Outcomes:

- Opportunities to share lessons learned, shared approaches to common issues, and maybe shared services

- Informal and formal municipal networks (maybe a Local Government Advisory Council/community of practice)
- Annual Bi-State workshop
- Coordinated approach to regional issues

Deliverables:
- Annual Bi-State Workshop
- Regional collaboration on issues related to LIS

Target audiences:
- Local government and communities throughout the LISS area.

Partners:
- Local, County, Councils of Governments, State, Federal governments, regional planning groups, academia, Sea Grant, NGOs, CIRCA, any group with relevant tools

Timeline:
- Annual workshop
- Ongoing thinking

Resources:
- $30,000 for Workshop costs (annual), including coordination.
- Circuit Rider Planner employment costs (detailed in 2.1). Travel costs for Circuit Rider Planner interaction.

Implementation Actions targeted:
- SC-20: Provide support to municipalities on low-impact development and green infrastructure.
- SC-23: Develop tools (e.g. training modules, websites, regulations, best practices, etc.) and conduct region-wide and town-specific workshops to assist municipalities in the development of sustainability and resiliency plans and their integration into comprehensive plans.
- SC-24: Support community development, adoption, and implementation of new or updated Municipal Sustainability Plans and Coastal Resiliency Plans.
- SC-30: Implement standards, best practices, and educational materials for Green Infrastructure/Low-Impact Development planning and implementation.

3. Develop and maintain a clearinghouse of tools and resources

Rationale/relevance:
- LIS communities need support to implement practices, policies and tools related to land use, climate adaptation planning/implementation, water quality management and habitat protection.
- Establish which tools/approaches are useful
- Provide specialized technical support
- Many resources and tools are underused

- Need for facilitating access to best available tools and information
- Would lessen reliance on multiple, redundant analyses (avoid consultant driven designs and analyses)

Objectives:

- Create or use an existing user-friendly online clearinghouse of curated LISS-related planning resources, information, tools, grants, maps, etc.
- Research existing online clearinghouses/tool kits to determine if LISS related materials would fit into an existing one or if a new clearinghouse/toolkit needs to be created. Circuit riders will review the U.S. Climate Resilience Toolkit, EcoAdapt Climate Adaptation Knowledge Exchange (CAKE), and Georgetown Climate Center Adaptation Clearinghouse. Preliminary work group review identifies CAKE as a good platform to build upon and add LIS resources.
- Generate an annotated list of tightly-focused resources for LIS
- Demonstrate gaps and where new resources are needed or where existing resources can be refined for new localities/geographies
- Clearinghouse that is updated/maintained

Outcomes:

- Assist community participation in the FEMA Community Rating System
- Assist communities in moving from concepts to plans that can be used in grant and permit applications
- Communities are empowered with easy access to resources to assist in enhancing their resilience and sustainability
- Increase community capacity to work on LISS objectives
- Communities implement actions to increase resilience and sustainability
- Increased ability to share approaches and services among communities
- Provide materials for training programs/technical support

Deliverables:

- Clearinghouse of targeted information, tools and resources
- Identification of gaps in tools and resources

Target audiences:

- Local government and communities throughout the LISS area.

Partners:

- Local, County, Councils of Governments, State, Federal governments, regional planning groups, academia, Sea Grant, NGOs, CIRCA, any group with a relevant tool
- (LIS Resource Center)

Timeline:

- Year 1: Develop clearinghouse
- Year 2+: Maintain and update clearinghouse

Resources:

- Six months to one year position (or contractor/circuit riders) to develop the clearinghouse and the circuit rider positions to maintain and update.
- Website hosting

Implementation Actions targeted:

- SC-20: Provide support to municipalities on low-impact development and green infrastructure.
- SC-23: Develop tools (e.g. training modules, websites, regulations, best practices, etc.) and conduct region-wide and town-specific workshops to assist municipalities in the development of sustainability and resiliency plans and their integration into comprehensive plans.

4. Create and deliver training programs to improve the use of existing tools

Rationale/relevance:

- In recent years, resources have been directed toward development of technical tools that illustrate and assess the effects of sea level rise, storm surge, and vulnerability for a variety of resilience topics (e.g. heat sensitivity, coastal and inland flooding, living shorelines, critical infrastructure). However, many technical tools are underutilized due to a lack of awareness about their availability and/or the understanding of how to use them to improve and inform decision making, resilience planning and project design at appropriate and multiple scales.

Objectives:

- Build capacity to help decision-makers/communities choose and use tools that move projects towards planning and implementation.
- Modify tools if needed for local communities.
- Create communities of practice or a "train the trainers" approach for using technical tools to inform decision making.
- Deliver training programs tailored to needs.

Outcomes:

- More grant applications for adaptation and resilience projects from LIS communities
- Training materials/modules (e.g. guides, map viewers, "how to" webinars) on existing tools for a range of decision makers.
- Develop materials for training programs.
- Science-based decision making.
- Informed planning and project design.
- Educating municipalities and planners on existing tools and resources.

Deliverables:

- Technical support and training materials (informed by needs assessment efforts) developed for a variety of existing climate assessment and vulnerability tools.

Target audiences:

- Municipal and state/federal agency staff, regional planning organizations, consultants, and conservation organizations.

Partners:

- Academic institutions, TNC, Sustainable CT, CIRCA and other research institutes, Sea Grant, CLEAR, state/federal agencies with technical tools.

Timeline:

- Short term (1-2 years): use needs assessments to guide creation of training approach/materials/modules and catalog tools in LISS clearinghouse
- Ongoing: integrate the training into both new and existing regional outreach efforts

Resources:

- $200K for short term link to needs assessment/clearinghouse and training material development
- Capacity for ongoing training needs

Implementation Actions targeted:

- SC-20: Provide support to municipalities on low-impact development and green infrastructure.
- SC-23: Develop tools (e.g. training modules, websites, regulations, best practices, etc.) and conduct region-wide and town-specific workshops to assist municipalities in the development of sustainability and resiliency plans and their integration into comprehensive plans.

5. Improve coordination among levels of government

Rationale/relevance:

- Policies and services are provided at different levels of government. However, several of those policies and services will be affected by a changing climate (e.g. road flooding, culverts no longer adequate for drainage systems). There is a need for coordination and alignment of policies and services at different levels of government.

Objectives:

- Effectively communicate and coordinate with federal, state, and local agencies to manage and plan for infrastructure improvements to address and accommodate coastal hazards

Outcomes:

- Better coordination among fragmented government entities
- Educating municipalities and planners on existing tools and resources – materials for training programs
- Providing guidance on permitting
- Implementing best practices
    - Integrating nature-based solutions and traditional infrastructures (e.g., surface transportation)

    - Enhancing and restoring migration pathways for coastal wetlands
    - Improving tidal connections with larger culverts or open spans/spillways
    - Improving flood resilience (and aquatic organism passage) with dam removal
- Facilitate the progress across a pipeline of projects

Deliverables:

- Better communication and coordination across all levels of government (outreach staff)
- Leaders' education on BMPs for infrastructure in light of climate change
- Pilot projects implemented and highlighted to communities

Target audiences:

- Public and private owners, managers, planners, and regulators of infrastructure, as defined above.

Partners:

- Planners and regulators, infrastructure owners and managers, Departments of Transportation

Timeline:

- Year 1: Hire outreach staff (possibly circuit riders)
- Years 1-2: Workshops
- Year 2-5: Pilot Project planning and implementation

Resources:

- $$ Outreach staff (salary and benefits over 5 years)
- $ Online or in person workshops
- $$$-$$$$ pilot projects (potential to secure funding from outside sources)

Implementation Actions targeted:

- SC-20: Provide support to municipalities on low-impact development and green infrastructure.
- SC-23: Develop tools (e.g. training modules, websites, regulations, best practices, etc.) and conduct region-wide and town-specific workshops to assist municipalities in the development of sustainability and resiliency plans and their integration into comprehensive plans.
- SC-24: Support community development, adoption, and implementation of new or updated Municipal Sustainability Plans and Coastal Resiliency Plans.
- SC-30: Implement standards, best practices, and educational materials for Green Infrastructure/Low-Impact Development planning and implementation.

6. Support a compound flood risk modeling initiative

Rationale/relevance:

- Compound flood risk here refers to the risk for compound flooding from the combined effects of SLR on storm surge, (non-storm) tidal flooding, groundwater flooding, and stormwater.

- New challenges stemming from climate change, such as flooding exacerbated by SLR and compound flooding during coastal storms, have forced communities to reconsider the way they plan and manage coastal development, as well as when and where they choose to make investments. The ability to accurately forecast coastal inundation from large storms such as hurricanes, as well as more chronic impacts due to tidal and groundwater flooding and heavy rain events, is necessary to quantify the vulnerability of coastal communities and infrastructure. Moreover, while coastal protection has been a subject of much focus, NOAA has developed helpful resources on Adapting Stormwater Management for Coastal Floods describing the challenges specific to drainage infrastructure. Without an integrated approach to better understanding both coastal protection and associated drainage infrastructure, communities will increasingly be subject to risks of chronic and acute flooding from SLR and storms without the requisite information needed to make informed coastal and flood management decisions.
- There currently exist models that can simulate groundwater and oceanic/estuarine processes separately, at various levels of complexity, in the coastal watershed and surface waters of LIS, respectively. To accurately predict coastal flood extents, and the impacts of SLR on stormwater infrastructure and management, these models may be coupled to better understand compound flood risk on event, seasonal, and long-term scales. Coupling these models would better represent the flow of water through the land/sea system and the dynamics connecting surface stormwater, coastal ocean, and groundwater especially as they pertain to flood risk and ecosystem response. The resulting coupled modeling framework may be used by public and private entities seeking to identify future capital-improvement and operational management needs that address increased flooding caused by SLR and groundwater table rise. This underlying framework can help agencies develop cost and benefit data associated with financing projects under future climate scenarios. Additionally, the coupled modeling framework and associated flood risk products could be applied and/or adapted for use in other areas.

Objectives:

- Develop a better understanding of the risks of compound flooding from the combined effects of SLR on storm surge, tidal flooding, groundwater, and stormwater
- Effectively communicate with and educate municipalities and their residents about the compound-flood risks associated with sea level rise (i.e., exacerbated flooding from storm surge, groundwater, and stormwater)
- Establish strategies for mitigating and adapting to effects of compound flooding

Outcomes:

- Funding more research opportunities that will foster a better understanding of climate change effects on coastal communities, and incorporate management scenarios
- Municipalities and their residents will have a better understanding of the climate change implications, and will obtain the knowledge as to how to protect (or adapt) their communities in the face of future climate threats
- At-risk communities incorporate strategies to prepare for the effects of compound flood hazards; future decisions consider impacts of compound-flooding

Deliverables:

- Coupled modeling framework for compound-flood risk assessments of climate and management scenarios
- Analysis and visualization tools for assessment output with spatio-temporal details of compound flooding scenarios
- Strategies for coastal adaptation planning to address increasing risk of compound flooding
- Education and outreach strategies tailored to municipalities and residents

Target audiences:

- Communities, infrastructure owners and managers, and planners and regulators for floodplains and ecosystems vulnerable to compound flooding (now and in the future)

Partners:

- USGS, NYSG, NOAA, NWS, NYC, NY and CT state agencies (e.g. DOT, CT DEEP, NYSDEC), CIRCA, Academia, NGOs

Timeline:

- Modeling initiative (years 1-3)
- Outreach/education phase (years 4-5)

Resources:

- $500k/year for 3 years for modeling initiative
- $50k/year for outreach/education phase

Implementation Actions targeted:

- SC-20: Provide support to municipalities on low-impact development and green infrastructure.
- SC-23: Develop tools (e.g. training modules, websites, regulations, best practices, etc.) and conduct region-wide and town-specific workshops to assist municipalities in the development of sustainability and resiliency plans and their integration into comprehensive plans.
- SC-24: Support community development, adoption, and implementation of new or updated Municipal Sustainability Plans and Coastal Resiliency Plans.
- SC-30: Implement standards, best practices, and educational materials for Green Infrastructure/Low-Impact Development planning and implementation.

7. Creating a project pipeline

Rationale/relevance:

- Multiple LIS communities have developed sustainability and resiliency plans, and hundreds of projects have been identified. However, the current rate of implementation does not match the pace of the challenges impacting the Sound and its resources. Meeting existing and emerging challenges to the Sound's coastal and marine resources requires demonstrating and socializing new approaches to innovative, complex, large-scale and/or regional projects with the potential for greater environmental and social benefit. To

enhance the movement through a pipeline of projects at different stages of maturity will require the active engagement and coordination with funding and regulatory agencies. Circuit riders will work with municipalities to help them understand what grants they could be applying for, explain the planning needed to be able to apply for a grant, and guide them through the planning process providing planning and technical assistance where possible.

Objectives:

- Identify and inventory existing and new lists of projects; determine whether they are in idea, design, or shovel-ready phase
- Establish selection criteria for highest-impact projects that:
    - Have high environmental benefit relative to cost (e.g. large-scale and/or complex projects; potential to demonstrate, influence, pilot, innovate, and/or provide a proof of concept)
    - Criteria should incentivize, collaborative, multi-benefit, networked projects across sectors (e.g. transportation, environment, health and safety), geographies (e.g. design/build regional GSI installations through shared contracts), consider ecosystem tradeoffs, enhance the integrity of natural systems, and is sensitive to environmental justice considerations
    - Takes into account cost-benefit analyses
- Prioritize project pipeline based on criteria
- Enhance coordination with funding and regulatory agencies
- Mobilize existing public funding sources to achieve multiple benefits and community needs (e.g. infrastructure resilience, clean water, habitat restoration, equitable public access).
- Promote and accelerate implementation of larger, regional, networked multi-benefit projects.

Outcomes:

- Agencies and communities' awareness and use of existing regional project databases is increased.
- Opportunities to advance the highest impact projects are prioritized.
- Public funding sources and programs are optimized to support the continuum from planning to implementation of high-impact projects (e.g. through NFWF Futures Funds, HUD or FEMA funding).
- Regulators, communities and practitioners are mobilized for collaborative planning and implementation, working across sectors to implement high impact projects that address multiple issues (e.g. transportation, water quality, wetlands).
- Facilitate the generation of a pipeline of implementation projects ready for funding.
- High-impact project development from idea -> design -> implementation is accelerated.

Deliverables:

- Develop/establish project selection criteria
- Identify and prioritize high-impact project pipeline
- Identify and mobilize public funding sources
- Implement highest-impact projects

- Community specific guide to funding opportunities for project implementation.

Target audiences:

- State/federal agency staff, municipal officials, regional planning organizations, developers, engineers, and consultants and conservation organizations.

Partners:

- CT DEEP, NYSDEC, FEMA, municipalities, academic institutions, TNC, Sustainable CT, CIRCA and other research institutes

Timeline:

- Year 1: Develop/establish project selection/prioritization criteria; identify and prioritize high-impact project pipeline (coordinate with needs assessment, circuit rider, infrastructure, services, flooding/SLR)
- Year 1-2: Identify and mobilize public funding sources (coordinate with barriers working group)
- Year 1-5: Implement highest-impact projects (coordination between with circuit rider, infrastructure, services, flooding/SLR)

Resources:

- Capacity to identify projects, develop criteria: coordinate with needs assessment/ municipal circuit rider (year 1)
- Capacity to prioritize and promote high impact projects: coordinate with dedicated working group (year 1-2)
- TBD: Redirect $$$ and new capacity (year 3-5)

Implementation Actions targeted:

- SC-20: Provide support to municipalities on low-impact development and green infrastructure.
- SC-24: Support community development, adoption, and implementation of new or updated Municipal Sustainability Plans and Coastal Resiliency Plans.
- SC-30: Implement standards, best practices, and educational materials for Green Infrastructure/Low-Impact Development planning and implementation.

8. Break down barriers to implementation

Rationale/relevance:

- It was pretty clear from the landscape analysis that the bulk of efforts to date focus on generating/sharing information and tools. Although information and tools are key to increasing resilience, the incorporation of such information and use of tools towards actual planning and implementation seems more challenging. Although some challenges such as availability of funds, limited existing human capacity, and policy (including permitting, availability of funds, cost-benefit analyses, lack of monitoring) challenges may be obvious, it is important to uncover at a more granular level the most immediate impediments to building resilience through planning and implementation, if they are to be addressed.

- As stated above, we can easily anticipate three categories of challenges: financial, capacity and policy. Those could be addressed by, for example, creating a fund dedicated to meeting match requirements on grant applications that communities could compete for in order to finance implementation efforts. Other thoughts include rotating strategic capacity, such as grant writers or engineering contracts, to help municipalities address key steps towards implementation. Alternatively, liaison capacity to facilitate communication between municipal needs and state or federal regulators or programs might help address policy issues of common concern. However, it would be premature at this point to suggest solutions that precede the outcome of the needs assessment.

Objectives:

- Identify barriers to implementation (coordinate with needs assessment)
    - Funding resources (including match)
    - Policies
    - Capacity - regulatory and decision making (state to municipal level).
- Identify opportunities to break down barriers to implementation (e.g. silos/stove piping of regulatory/management agencies) through enhanced communications and targeted investments in targeted programs

Outcomes:

- Create strategic capacity to address barriers to implementation through:
    - a communications effort to align the needs with potential funding and management/regulatory (such as permitting) programs
    - an investment phase to address the most pressing financial, capacity, policy or other challenges and facilitate roll out
- Break down barriers of money, capacity, policy

Deliverables:

- An objective assessment of the most important barriers to implementation
- Investment in targeted programs to address such barriers
- An assessment of the effectiveness of such programs (specific numeric targets will be developed following the needs assessment)

Target audiences:

- Municipalities, state and federal programs, developers, engineers, consultants (to be refined from the needs assessment)

Partners:

- Largely TBD: this working group's needs assessment leads, this sub-group or the larger working group to assess and develop programs, TBD leads depending on what programs are developed.

Timeline:

- Needs assessment (year 1)
- Program development (year 2)

- Program implementation with enhanced communications and targeted investments (year 3-5)

Resources:
- Coordinate with needs assessment (year 1)
- Dedicated working group members and circuit riders time and effort (year 2)
- TBD, likely $250k/year investments/new capacity (year 3-5)

Implementation Actions targeted:
- SC-20: Provide support to municipalities on low-impact development and green infrastructure.
- SC-23: Develop tools (e.g. training modules, websites, regulations, best practices, etc.) and conduct region-wide and town-specific workshops to assist municipalities in the development of sustainability and resiliency plans and their integration into comprehensive plans.
- SC-24: Support community development, adoption, and implementation of new or updated Municipal Sustainability Plans and Coastal Resiliency Plans.
- SC-30: Implement standards, best practices, and educational materials for Green Infrastructure/Low-Impact Development planning and implementation.

VI. Capacity

The work plan will be implemented through the recruitment of five "circuit riders" (3 in NY, 2 in CT) for each of the five years of the work plan. Circuit riders are professionals with backgrounds in resilience, coastal oceanography/engineering, planning, Geographic Information Systems (GIS), and natural/marine resources who provide education and outreach for local governments in order to increase awareness of and local capacity to implement goals of the work plan and the CCMP. The circuit riders will initiate the needs assessment, plan and implement the work plan tasks adjusted from the outcome of the needs assessment, develop and implement training programs and develop assessment programs to evaluate success and make program assessments. While working in different geographies, the circuit riders will overlap in substance and work closely as a team. Specifically, the circuit riders will:

- Understand the local landscape and develop relationships with the local players, including communities and state officials and leaders, LISS staff, etc.
- Provide educational resources and technical support professionals tasked with providing guidance and increasing capacity for municipalities to achieve sustainability and resilience goals under the CCMP
- Provide technical assistance with clearinghouse tool use
- Promote and encourage partnerships and collaborations both within and between states
- Assist communities with implementing/understanding existing sustainability and resilience programs such as the Community Rating System (FEMA), Climate Smart Communities (NYSDEC), Sustainable CT, and other existing underutilized programs

- Help communities see how the above programs could help them do things that they already need to do and help access funding/grants (e.g. required Emergency Management plans, permits)
- Provide technical assistance for overlay zones and other land use mechanisms to address sea level rise and other sustainability/resilience issues
- Inform and educate communities about the availability of grants and provide grant writing assistance
- Produce and circulate newsletters regularly
- Provide support for a regional network of local governments working towards sustainability and resilience
- Create a feedback loop with state and LISS stakeholders to provide information on what communities are doing to implement programs and ID gaps in understanding, resources that need to be addressed
- Incorporate Environmental Justice best practices into all aforementioned tasks
- With guidance from LISS staff, work to define how LISS will track the Waterfront Community Resiliency and Sustainability ecosystem target and aid in the research and engagement with municipalities to perform the required tracking.

Major Deliverables:

- Dedicated technical assistance for municipalities for implementing existing and new tools.
- Workshops, training opportunities, newsletters, networking opportunities and other mechanisms for transferring knowledge to local governments and assisting them in implementing land use, ordinance, planning, and locally based tools for increasing sustainability and resilience.
- New LISS-specific planning, programming, and tools for sustainable and resilient communities.

VII. Organizational structure

The overall organizational structure to advance the previously described work plan is presented in the organization chart below. In order to capitalize on the diversity of affiliations, expertise, experience and engagement contained within the LISS SRC Working Group (”Working Group”) and leveraged to develop the work plan, the Working Group will have broad oversight and be updated on the progress on all initiatives and activities at its quarterly meetings. An Executive Committee of the Working Group will be established to advise and help manage the overall program and coordinate among its different initiatives. There will be three major program initiatives to advance progress on the work plan: Circuit Riders, Compound Flood Risk Modeling, and Break Down Barriers. The Work Plan will be executed by personnel working in each of these three program initiatives. For each of these programs initiatives there will be executive and programmatic oversight and administrative support:

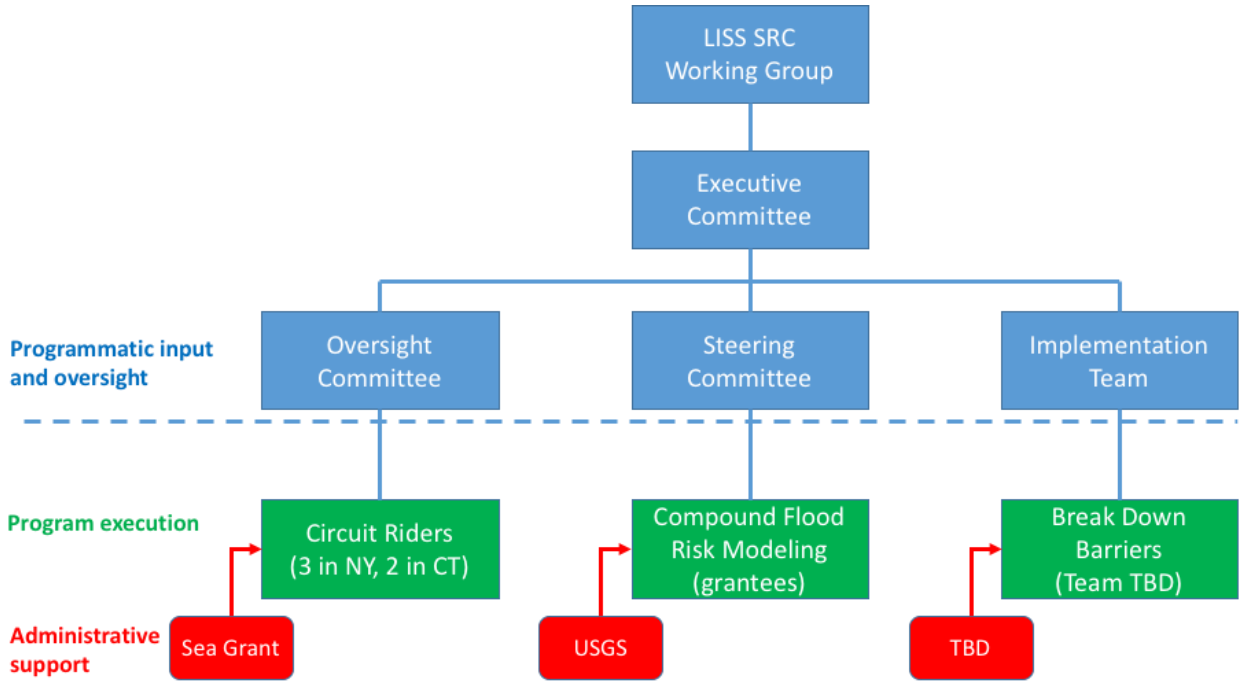
- An executive committee will be formed as a subset of the Working Group to provide guidance and oversight on behalf of the Working Group, between its regularly scheduled quarterly meetings. While specific committees/teams with relevant interest and expertise will provide programmatic input and oversight for each of the different initiatives, the

Executive Committee will assume responsibility for coordination, cohesion and synchronization across the different initiatives. The executive team will be made up of members from the working group and have at least one representative from the three program initiative committees/team (Oversight Committee, Steering Committee, Implementation Team, see below).

- Programmatic oversight: a small committee/team with topical interest and expertise will guide the substantive aspects and progress of each of the three program initiatives. Matched to the demands of each program initiative, they will comprise an Oversight Committee, a Steering Committee and an Implementation Team. These committees/team will insure that the right people are contacted, the right resources are accessed, and the right program resources are brought to bear. The programmatic oversight committees/teams may include members from outside the Working Group for targeted expertise and coordination.
- Administrative support: a complementary but distinct administrative structure addresses day to day tasks. This includes people getting hired and paid, contracts established, reports filed, etc. Sea Grant and USGS will undertake this function for the Circuit Riders and Compound Flood Risk Modeling initiative, respectively. The administrative structure for the Break Down Barriers program will be determined in year 2, when the nature of the program(s) developed develops.

The proposed complementarity of the programmatic and administrative aspects will increase efficiencies and allow talented but busy people to get involved in advisory and oversight tasks but not be burdened by time consuming administrative tasks.

Details specific to each of the three program initiatives are outlined below.



1. Circuit riders

1.1. Programmatic input and oversight

The circuit riders will function as a team, and together, report and be accountable to the LISS Sustainable and Resilient Communities Working Group work plan. Further, the Working Group will form *thematic teams* aligned with the five Desired Impacts (thematic and functional priorities): Better coordinated regional response, Better trained decision makers, Infrastructure improvements planning, Viability of government services, and Facilitated implementation. It is anticipated that the thematic teams will include individuals with specific interests that participated in the drafting of the different sections of the work plan, with the potential to draw desirable experience or expertise from outside the working group as needed. The thematic teams will serve as a resource for programmatic guidance to accelerate progress on the work plan tasks. One representative from each of the thematic teams will serve with Sea Grant representatives on the *Oversight Committee*, that will provide advice on and guide the work of the circuit riders, including reviewing and approving annually submitted Circuit Rider Work Plans of the New York and Connecticut Circuit Riders. The circuit riders will report programmatic progress against such work plans at the Working Group quarterly meetings.

1.2. Administrative structure

Administratively, the circuit riders will follow the successful model of the Long Island Sound Outreach Coordinators. The circuit riders will be administratively managed by the Sea Grant programs in Connecticut (2 circuit riders) and New York (3 circuit riders), with the clear understanding that they are expected to work together as a team and be accountable to the overall work plan as well as to their individual Circuit Rider Work Plans. Since each circuit rider will be assigned a specific geographic area of responsibility (to be defined with further input from the Working Group), and in order to avoid spending unnecessary time traveling, circuit riders may be physically located in offices other than Sea Grant offices. Administrative placement within Sea Grant programs will (1) assure supervision/oversight by the Working Group co-chairs, who will convene regular calls among circuit riders, (2) leverage the networks and the sustainability/resilience technical expertise of Sea Grant extension specialists and researchers within ongoing Sea Grant programs ,and (3) provide the culture of objectivity and non-advocacy inherent to Sea Grant programs that should facilitate Circuit Rider Work Plans and enable integration of local municipal efforts.

This model was chosen as an alternative to a distributed effort that would build onto existing sustainability and resilience capacity. Staff members in those positions already carry heavy workloads, and there is an inherent challenge in coordinating across institutions with different practices and cultures.

The circuit riders will be new positions recruited through open searches. Search committees will be chaired by the Sea Grant director and extension lead from the state where the positions will be located, and will include no less than 5 members of the Working Group. The search committees will draft the job descriptions, help broadly disseminate ads, review applications and make recommendations for offers. The chairs of the search committee will make offers in a process

consistent with their administrative institution. Sea Grant programs, through their directors (who serve as the Working Group co-chairs) and extension leads, will provide administrative oversight for the positions, including drafting individual annual Circuit Rider Work Plans with input from the Oversight Committee (which may have to be tailored to the local needs of the communities in the geography they serve), performance review with input from the Oversight Committee and Working Group, annual reappointment, and other issues as they arise. This will be accomplished as part of the Sea Grant leadership normal program management efforts, at no additional costs to this project.

2. Compound flood risk modeling initiative

2.1. Programmatic input and oversight

The compound flood risk modeling initiative will be a task led by USGS, given its overall depth and breadth of in house topical expertise, with technical direction and guidance from topical experts, including from within and outside the Working Group. Specifically, the Working Group and USGS together will identify potential members for a compound flood risk modeling *Steering Committee*, composed of relevant topical experts, modelers, and local/regional managers, who will oversee technical and programmatic aspects of the initiative. Serving as PI, USGS will develop a roadmap to seek and enroll partners to assure an appropriate complementarity of expertise and experience. The main deliverable will be a coupled modeling framework with user-friendly and management-oriented outputs that can be used by communities and managers, and delivered through a targeted outreach effort. USGS will engage regularly (no less than quarterly) with the Steering Committee, and report bi-annually to the Working Group. The outreach aspects of the initiative (years 4-5) will be developed with interested parties as the modeling effort develops.

2.2. Administrative structure

The compound flood risk modeling initiative will be administered by USGS, through an inter-agency agreement, on a non-competitive basis. USGS will receive the funds, build the project team with relevant partners, issue and manage subaward as necessary, and provide administrative project oversight including necessary interim and final reporting needs.

3. Break down barriers program

3.1. Programmatic input and oversight

The Break Down Barriers program is a longer-term effort, informed by the Needs Assessment (in year 1), and designed (in year 2) (see more details in Task 8 of the work plan) to address the most pressing needs. The implementation of the program is clearly two-fold: a communications effort to align the needs with potential funding and management/regulatory (such as permitting) programs, and an investment phase to address the most pressing financial, capacity, policy or other challenges and facilitate roll out. While the involvement of the circuit riders will be essential, it will not be sufficient. The program will require the involvement of experienced individuals from a diversity of backgrounds and affiliations to facilitate the program

communications and guide its implementation. The break down barriers program *Implementation Team* will be formed as a subset of the Working Group, and supplemented with relevant expertise from outside the Working Group, to accomplish those tasks. The implementation team will report quarterly to the Working Group.

3.2. Administrative structure

The Break Down Barriers program Implementation Team will be formed to participate in all aspects of the Break Down Barriers program, including providing input into the design of the Needs Assessment, the design of targeted investment programs, and ongoing communications to align project needs with funding and management/regulatory programs (see more details in Task 8 of the work plan). As financial, capacity, and policy challenges emerge, the Working Group will suggest and establish appropriate administrative structures to handle such challenges and relevant tasks. This activity will occur prior to the request for year 3 funds for targeted investments.

4. Summary of assignment of responsibilities

The following is a summary of the assignment of responsibilities inherent in the organization structure outlined above and as allocated among the capacities of the Working Group:

An **Oversight Committe**e will provide programmatic input and oversight to the circuit riders.

The **circuit riders** (administratively managed through Sea Grant) will have **primary responsibility** for the following work plan tasks:

1. Needs assessment
2. Hold annual workshops
3. *Maintenance* of the clearinghouse of tools and resources
4. Create and deliver training programs to improve the use of existing tools
5. Improve coordination among levels of government
6. *Outreach* associated with the compound flood risk modeling initiative
7. Creating a project pipeline

The **circuit riders** will **participate** in the following tasks:

3. Develop a clearinghouse of tools and resources (development and web hosting to be awarded competitively)
8. Break down barriers to implementation (led by implementation team)

A **Steering Committee** will **lead** the following task:

6. Compound flood risk modeling initiative (funds to be managed by USGS)

The **Implementation Team** will **lead** the following task:

8. Break Down Barriers to implementation (investment phase to be administered by TBD)

VIII. Timeline

Tasks	year 1	year 2	year 3	year 4	year 5
Needs assessment					
Hold annual workshops					
Develop and maintain clearinghouse					
Develop training programs to improve use of tools					
Improve the coordination among levels of government					
Support a compound flood risk modeling initiative					
Create a project pipeline					
Understand and break down barriers to implementation					

IX. Assessment and reporting

As mentioned above, the project management will include quarterly meetings of the work group, where the circuit riders will present updates on the progress along the different tasks. Therefore, progress against the goals will be measured on an ongoing basis, and project management will be iterative in order to allow adjustments in real time.

Specific and quantitative targets will be developed for all aspects of the work plan where feasible and practical, and progress against those metrics will be tracked annually and shared with EPA.

As per EPA LISS award requirements, semi-annual progress reports will be submitted to the EPA Project Officer within 30 days of the end of each six month reporting period. Additionally, a final report will be submitted within 90 days of the expiration of the project period. These progress reports will identify the project's deliverables/outputs, and associated metrics and addressed 2020-2024 Comprehensive Conservation and Management Plan (CCMP) Implementation Actions. By reporting on these items, we will be able to aid LISS in tracking how the project progresses the Implementation Actions and Ecosystem Targets of the 2020-2024 CCMP. Additionally, progress will be reported on an annual basis as part of the annual LISS budget request process. Further, the Circuit Riders, with guidance from LISS staff, will work to define how LISS will track the Waterfront Community Resiliency and Sustainability ecosystem target and aid in the research and engagement with municipalities to perform the required tracking.

Finally, we will aim to share accomplishments for cross reporting against aligned goals of other initiatives, such as the Governor's Council on Climate Change (GC3) in Connecticut.