

Proposals to conduct broad, risk-based, climate change vulnerability assessments of the Santa Monica Bay Restoration Plan (CCMP)

Background

There has been broad consensus in our region that climate change will have significant impacts on local communities, and we must identify vulnerabilities and prepare to adapt to these impacts. Recent studies, especially downscaled modeling work conducted by researchers at UCLA, show that local impacts of climate change in the Santa Monica Bay region will include extreme weather patterns in the form of both increased storm intensity, severe drought, and increased extreme heat waves and Santa Ana wind events. Preliminary results from USGS coastal profiling modeling work also indicates that in addition to sea level rise, increased frequency and intensity of storm surge will also have severe impact on the regional's shoreline. Evaluating and addressing potential impacts of climate change has been an important objective of the Santa Monica Bay National Estuary Program (SMBNEP), which was formally incorporated into the Santa Monica Bay Restoration Plan (BRP, the CCMP for Santa Monica Bay) in 2013. We have also been proactive in working with our partners and stakeholders to conduct studies of climate change impacts and pilot projects for implementing and evaluating adaptation measures, including:

- Study of potential climate change impacts on Ballona Wetlands Ecological Reserve restoration funded with EPA Climate Ready Estuary grant. Completed.
- AdaptLA: climate change coastal impact assessment and adaptation capacity building in partnership with USC Sea Grant, LARC, Heal the Bay and coastal cities. On-going.
- Santa Monica beach dune restoration pilot project. Initiated.
- Kelp restoration pilot project with coastal conservancy climate ready grant program. Applied and invited to submit full proposal.

However, those projects and other efforts are only targeted to a specific habitat or geographic area and are pilot projects with limited scope. A broad, risk-based climate change vulnerability assessment is needed for all objectives and milestones susceptible to climate change in the BRP to meet the direction of the National Estuary Program funding guidance, and more importantly, to ensure that our BRP will be "climate ready." The BRP will then be able to address the risks posed by climate change and achieve its intended protection and restoration benefits through time. There will be additional benefits from this project, such as: results from our analysis will inform many partner agencies and cities in their climate change adaptation planning efforts; the project will result in a consolidation of information from a variety of projects throughout the region for a broader application and data gap identification; and the project will evaluate successes of pilot projects for broader application.

Objectives

The primary objective of this project is to conduct a broad, risk-based climate change vulnerability assessment of the actions and milestones in the SMBNEP's Bay Restoration Plan to identify strengths and weaknesses of existing milestones to manage and adapt to the impacts of climate change. More specifically, this project will

- i. Review, compile, and communicate the results of the latest research in climate change impacts with focus on specific regional risk identification and characterization;
- ii. Identify, evaluate, and prioritize the vulnerability of all susceptible BRP actions/milestones;
- iii. Identify gaps and revise existing and/or develop new climate change adaptation strategies and projects to be incorporated into the BRP.

Description

This project will use the approach laid out in the EPA *Being Prepared for Climate Change* Workbook, primarily Steps 1-5. Although Steps 6-10 of the Workbook is not included in the scope of this project, additional funding resources will be identified to complete these steps to select new adaptation actions/milestones for implementation, and incorporate these actions/milestones into the BRP by FY 2018, when the BRP is scheduled for a major update.

The project will be carried out in coordination with several partner agencies and organizations to take advantage of their similar completed or ongoing efforts. Partners and their existing efforts will include, but are not limited to:

- USC Sea Grant, LARC, Heal the Bay, coastal cities, and the on-going AdaptLA: climate change coastal impact assessment and adaptation capacity building project;
- City of Los Angeles and its AdaptLA vulnerability assessment project funded by Sea Grant and completed in 2014;
- LA County Department of Public Works (LACDPW) and the climate change impacts assessment on the regional water resources conducted as part of the IRWMP plan update completed in 2014;
- US Army Corps of Engineers and LACDPW and their on-going climate change impacts assessment conducted as part of their LA basin storm water capture feasibility study;
- Los Angeles County Department of Beaches and Harbors and its modeling project on sea level rise and other climate change effects to evaluate hardscaping, regular beach maintenance, and their “winter sand berms” along the county beaches; and
- Local universities such as UCLA, USC, and Loyola Marymount University and their advanced scaled-down modeling work of climate change impact scenarios on watersheds, wetlands, and shoreline habitats.

Task 1 – Review and Communication of Existing Information: This task corresponds to EPA Workbook Step 1. To provide necessary background for the vulnerability assessment, existing research on climate change impacts and similar vulnerability assessment efforts including, but are not limited to those mentioned above, will be reviewed and compiled. The review and compilation will focus on studies and assessment that identify and characterize local risks and address the local impacts of climate change. Stakeholders will be involved to receive public input on additional sources of information through surveys and interviews, and to disseminate compiled information and solicit participation. Our Technical Advisory Committee (TAC) will also be involved to provide input on the validity and efficacy of the compiled information and to help finalize a list of major climate stressors and their potential risks.

Task 2 – Risk Identification: This task corresponds to Workbook Steps 2 and 3. Existing milestones in our BRP will be used to establish the context for the vulnerability assessment. Because there is a large number of BRP milestones (>160), a preliminary screening will be conducted to identify a list of milestones that are susceptible to potential climate change impacts. Tables modeled after Table 3-1a-d in the Workbook will then be developed to cross-reference major climate change stressors, potential risks, and susceptible BRP milestones.

Task 3 – Risk Analysis and Prioritization: This task corresponds to Workbook Steps 4 and 5. Utilizing the tables developed under Task 2, one or a series of facilitated stakeholder workshops will be conducted to receive input on the level of consequences and probability of identified potential risks. Matrices similar to those shown in the Workbook will be developed to categorize and summarize the results of stakeholder input. The matrices will be further compiled and analyzed. With additional input from the TAC, a list of existing and potential new BRP milestones with specific risk types and ranking of qualitative risk level (low, medium, and high) will be developed. A final report will be produced to summarize the results of the project.

Project Budget

Funding is needed to support staff time and consulting services required to inventory existing information, analyze BRP milestones, facilitate the stakeholder process, and develop the assessment report. The estimated budget is \$20,000 and the proposed project time period is October 2015 – September 2016.

Budget		
Director of Watershed Program	110 hours	\$4,000
Watershed Program Manager	330 hours	\$7,900
Benefits: 26%		\$3,100
Consulting Service (facilitation)		\$5,000
TOTAL BUDGET		\$20,000