

'Lifting the Fog' Executive Summary

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¹ Formally known as the Coastal Services Center

Background

Over the past several years in California, new tools, models, and guidance have been developed to address the impacts of coastal climate change. These resources are primarily targeted at the local coastal decision-makers (planners, regulators, consultants, natural resource managers and environmental scientists) who are on the front lines of addressing sea level rise (SLR) and storm surge impacts, and must prepare their communities for the future. To help local decision-makers use these new resources, a coalition of public, private, and non-profit organizations collaborated to provide practical support for coastal climate change adaptation planning. The coalition included: NOAA Office for Coastal Management², Gulf of the Farallones National Marine Sanctuary, The Nature Conservancy, San Francisco Bay National Estuarine Research Reserve, Coravai LLC, and Tijuana River National Estuarine Research Reserve. This effort, called “*Lifting the Fog: Bringing Clarity to Shoreline Change Models and Sea Level Rise Tools*”, took place from January - November 2014 through a series of facilitated dialogues, trainings, and collaborative product development. The primary goal of this project was to create a collaborative communication framework that will help California coastal decision-makers navigate the range of available SLR adaptation planning³ tools and inform tool developers of future adaptation needs. This report summarizes the primary activities, lessons learned, and next steps of this collaborative effort.

Primary Activities

May 22, 2014 Tool Development Community Workshop, Oakland, CA

This workshop consisted of a series of facilitated dialogues and small-group exercises for invited participants from the tool and model development community to explore a shared communication framework to help end-users navigate the different planning tools and data available to them. Key participants for this workshop included federal, state and regional government staff, consultants, and experts from the non-profit sector who work to develop decision-support tools or models focused on improving understanding of sea level rise and coastal flooding in California. In addition, a number of participants were invited who represented the community of intended end-users of these tools, including experts from coastal management agencies in the State who work closely to permit and plan projects that integrate climate change considerations.

The primary goals of this workshop were to identify gaps in resources to support local planning; coordinate project outreach; and develop a framework for collaboration and communication amongst the participating project teams.

The workshop provided a first-of-its-kind, statewide forum for the tool and model development community to discuss approaches, lessons learned, and opportunities for

² Formally known as the Coastal Services Center

³ We use the term “adaptation planning” inclusively to cover a range of preparatory activities undertaken for community planning, capital improvement, hazard mitigation and emergency response planning, natural resource management and restoration, etc.

collaboration. A number of communications products and end-user resources were proposed at the workshop and several are currently in development. Those resources which have been completed are available on the website located at coastaladaptation.org. The final proceedings report for the workshop can be found [here](#).

Aug 18, 2014 California Adaptation Forum Special Session, Sacramento, CA

The second workshop, hosted at the California Adaptation Forum in Sacramento, CA, focused on providing resources to coastal decision-makers to help them navigate the SLR tools, models, and resources available to support planning and management efforts across the State. In addition, the workshop was an opportunity to discuss the communication products suggested at the May 22 workshop, as well as to collect input on prioritization, additional technical support needs, and next steps from participants.

The workshop consisted of: 1) an interactive tool café with stations for tool exploration with developers; 2) a panel session for direct interaction between model and tool developers with decision-makers and end-users; and 3) a discussion of communication strategies around SLR decision-support tools. Workshop participants were a diverse mix of practitioners attending the California Adaptation Forum, including federal, state and local agencies; consultants; non-profit organizations and academia. The final proceedings report for the workshop can be found [here](#).

Informal Collaborations

As a result of planning and attending these workshops, several members of the original "Lifting the Fog" planning collaborative have since partnered to move several ideas forward to meet the needs of our end-users. Examples include: development of regional matrices that describe tools and data available in different regions of the country; shared FAQs; additional trainings and symposia at the National Adaptation Forum; and shared communications strategies for local decision makers.

Key Findings

Throughout the project, valuable lessons have been learned and insights have been gained through workshop proceedings, evaluations, and informal conversations. A summary of top-level findings include:

- A number of significant barriers remain for integrating SLR decision-support tools into planning for all but the most well-mobilized, well-motivated, and well-funded coastal municipalities. A lack of adaptation knowledge, staff time, and resources to hire a consultant limit most efforts.
- Even in the "early adopter" communities where SLR planning is already happening, there is still a need to expand regional cross-jurisdictional collaboration, and to bring more partners to the table, such as transportation agencies.
- Sea level rise planning is fraught with uncertainty. Not only is climate change science an emerging field, but modeling complex shoreline processes is also in its infancy. Local coastal decision-makers will need to accommodate uncertainty when planning, and learn to communicate effectively with stakeholders about uncertainties, tradeoffs, and resilience.

- The end-users of SLR planning tools must be engaged early and consistently in the tool development process, so that the final product addresses the questions the end-users and their stakeholders want answered.
- Planners don't want to know the "under the hood" information about models. They need to know where to begin with a simplified, short sound byte.

Looking Forward and Next Steps

For 'Lifting the Fog' collaborators

Listed below are a number of follow up products that interested parties can expect to see from this group.

- Website, housed under The Nature Conservancy's Coastal Resilience Network, that will include compiled resources such as:
 - May 2014 Tool Development Community workshop proceedings report
 - August 2014 Coastal Decision-Maker workshop proceedings report
 - Finalized Tools Matrix for California
 - Tool and Project Summaries
 - Case studies highlighting adaptation planning efforts that integrate sea level rise and shoreline change tools and models in California
 - 'Lifting the Fog' Executive Summary (this document)
- Regional tool matrices for other areas of the United States

For SLR Planning in California

- It was suggested that a single point of contact be established to ask, "What information and tools are available for my area?" This might be a valuable service that the Climate Readiness Institute could provide.
- The Ocean Protection Council will be publishing topographic and bathymetric cloud point data sets available on Open Topography by the end of 2014.
- The State Coastal Conservancy is looking at regional approaches to utilizing data across a region. They have been running a series of grant rounds for communities to get started on that work.
- More private sector engagement is needed, from industry representatives, from private landowners and developers, and from the insurance and banking sectors.

Project Collaborators

