Meeting Summary
Focus Group Meeting (#2)
Sea–Level Rise and Floodplain Management

March 18th, 2015
AECOM Office, Oakland California

This was the second in a series of meetings convening a Focus Group to guide the proposed outputs and products of a NOAA-funded project aimed at incorporating new sea-level rise and zone of flooding information into coastal planning. This project is being led by the Department of Water Resources (DWR) with support from Scripps Institution of Oceanography (SIO) and the California Ocean Science Trust. The Focus Group includes local floodplain managers, city and county planners, coastal flooding and hazard mitigation program coordinators, environmental engineers, and other subject matter experts.

Meeting Goals

- Determine requirements and specifications of proposed tiered product series
- Define audiences and platforms for dissemination and uptake of proposed products

Introductions and project updates

Lauma Jurkevics, DWR

Lauma Jurkevics (DWR) began the meeting by welcoming participants, leading a round of introductions (in the room and on the phone) and presenting the meeting's goals. Lauma gave a brief update on progress made since the first Focus Group meeting in October, 2014, primarily the completion of the Science Needs Assessment Report, and the vision for a tiered product series that fulfills the scope of the grant and incorporates feedback from project partners.

This meeting focused on introducing and determining the content for the proposed final products. In addition to developing a supplement to the National Flood Insurance Policy *(NFIP) California Quick Guide* the project team has expanded the final set of products to include a larger Comprehensive Report, which will provide a more detailed narrative about the project's main components in the context of the NFIP, and a Technical Methods Manual, which will provide technical guidance to local planners and technical practitioners for producing future condition mapping products based on SIO modeling methods and FEMA open coast mapping guidelines. This development of products was motivated by several key findings from the Science Needs Assessment that include:

- A need to balance sophistication with simplicity in regards to developing useful guidance and information products for sea-level rise planning and management. This can be addressed by developing tiered guidance and information products that provide different levels of information for different audiences.
- Flood indices are not as useful as mapping products from a local management and planning perspective. A visual tool that illustrates the zone of future flooding allows managers and planners to identify site-specific areas that are prone to flooding in a way that a flood index could not.

A key objective of this project's team and Focus Group is to use findings from the Needs Assessment to shape the production and distribution of final products. The Technical Methods Manual and Comprehensive Report were conceptualized in an effort to address these findings and better meet the project goals and objectives.

Because the content of *The Quick Guide* Coastal Supplement was discussed in detail at the previous Focus Group meeting, this meeting focused on outlining content for the newly proposed final products - the Comprehensive Report and the Technical Methods Manual. *The Quick Guide* Coastal Supplement's content will translate and present key information in a way that is consistent with the format and style of *The NFIP Quick Guide*.

Developing a tiered product series

Aaron McGregor, Ocean Science Trust

Aaron McGregor (Ocean Science Trust) explained the three proposed products in the tiered product series. Aaron reiterated the rationale and motivation for developing this suite of products, noting that the findings from the Needs Assessment and feedback from the Focus Group highlighted the limitations of *The Quick Guide* Coastal Supplement as a single product that could house all of the necessary information and successfully achieve the project goals and objectives. While *The Quick Guide* Coastal Supplement lends itself as a resource for understanding how to comply with the NFIP at a high-level, its presentation of information is not technically detailed. This is limiting in both the amount of pertinent information and level of detail that could be incorporated into *The Quick Guide* Coastal Supplement effectively, and the extent to which this product could be useful to local on-the-ground planning and management efforts around flooding.

The Comprehensive Report and Technical Methods Manual were conceptualized to address these limitations and provide a platform to address important information gaps. The Comprehensive Report will serve as a complete and detailed project summary that includes relevant background, context, and technical information, with the intent of being useful to a broader audience at multiple levels of government. Aaron noted that the Technical Methods Manual was developed out of the desire to elevate the utility of SIO's research by presenting their sea-level rise modeling methods in a format that could be duplicated in places beyond the 6

sites chosen for this project. Additionally, the Technical Methods Manual will provide information on how to develop mapping products from SIO's research in the context of FEMA mapping guidelines – placing SIO's modeling projections in a format that is relevant and useful to managing and planning for flooding at the local level.

It's important to note that while these products are distinct, they will reference and derive content from one another. Though the framing, information, and level of detail provided may vary between the three products, they are meant to be complementary. This will be important to reiterate once the products are being distributed and disseminated. As these products take form, the project team will continue to identify the primary and appropriate audiences for each of the products and track and identify strategies for reaching them. (See Appendix D for a table of venues and online channels for each product.)

Discussion Highlights:

Housing, maintaining, and updating products: There was a brief discussion regarding where the products would be hosted online, and how they might be updated or maintained in light of evolving sea-level rise science. Both DWR and Ocean Science Trust will host these products on their websites, and there may be other appropriate locations, including the websites of those agencies and organizations participating in the Focus Group. Updating the products' *content* will be challenging after the project terminates, given time and resource constraints. There may be ways to address the challenge of updating content. This can be explored further in the next meeting or subsequent meetings thereafter if the Focus Group choses to continue to meet beyond the requirements of the grant.

Coordinating with other future conditions modeling efforts. There are several parallel efforts underway, throughout California, to model and map future conditions from sea-level rise. In addition to similarities in modeling methodologies, there may be overlap in geographic focus. This has caused some confusion at the local level with regards to understanding the differences among these various efforts, and their application to coastal planning and management. In an effort to alleviate some of this confusion, this project team continues to be committed to coordinating with these different efforts, and clarifying the differences in methodology and approach.

Outlining the Comprehensive Report

Aaron McGregor, Ocean Science Trust

Aaron McGregor presented a straw-man outline of the Comprehensive Report and solicited feedback from the Focus Group on additional key information to include. Aaron noted the challenge in developing a single document that summarizes the project's components and outcomes and captures related information in sufficient detail to be distinct from similar products and useful to relevant stakeholders.

Topics in the comprehensive outline include:

- **Project background** – Includes a synopsis of the findings from the Needs Assessment, the Technical Methods Manual, and *The Quick Guide* Coastal Supplement.
- **The National Flood Insurance Program and future conditions mapping** – Background information on the NFIP and information on future conditions mapping within context of NFIP and beyond.
- **Sea-level rise science and related coastal processes** – Basic information and conceptual figures describing key physical processes around sea-level rise.
- **Additional resources** - Guidance documents, incentive programs, funding sources, and existing mapping products and tools. Also potential appendices with templates and guidelines for updating ordinances for future conditions planning.

As a next step, Aaron will propose a process for review and feedback on a draft Comprehensive Report, potentially reaching out to individual Focus Group members for input and guidance on specific sections and topics. See Appendix C for a more detailed proposed outline of the Comprehensive Report.

Discussion Highlights:

Providing broader value and application of this product. There was a brief discussion highlighting the value and application of the Comprehensive Report to informing sea-level rise and flood management at a West Coast regional and national level. Federal agencies, such as FEMA, could provide this product as a resource to their constituents, framing it as a model approach for other states and regions to use. Additionally, other states could take advantage of the process being piloted under this proposal and use it together with their own future conditions to develop similar guidance for their local communities. Stakeholders from Washington and Oregon were invited to participate in the project's Focus Group early on, recognizing that this project had the potential to inform sea-level rise planning at a West Coast regional level.

Linking products to existing planning frameworks and planning bodies. Several Focus Group participants noted the importance of linking this product to existing planning processes (i.e., Local Coastal Plan and General Plan updates) and groups that organize and coordinate planning efforts across cities and counties (i.e., Regional and County Collaboratives, and ICLEI). Building these connections can help widely distribute products and place them in contexts where they have direct application to planning activities.

Technical Methods Manual

Bob Battalio, Environmental Science Associates

Bob Battalio from Environmental Science Associates (ESA) gave a presentation and led a discussion on the development of the Technical Methods Manual. The Technical Methods Manual will relate the future coastal flood level outputs generated through SIO modeling to existing conditions flood maps from FEMA. This will

allow communities that overlap their locations with the SIO modeling sites to mainstream the results into map products to support coastal planning and adaptation. Outlining Scripps methodology and connecting the outputs to FEMA mapping protocols would also provide technical guidance to support the replication of the SIO methodology at communities in other places, further extending the results of this work. If there is demand, the manual could also relate additional future flood hazard projections from other sea-level rise modeling efforts to FEMA maps in general terms. Because the Technical Methods Manual is a resource intended to support planning and adaptation efforts at the local level, its primary audience is local (municipal) planners and the technical practitioners that help implement their work.

Bob will lead the development of the TMM along with a Technical Methods Manual Committee (TMMC), a subcommittee of Focus Group participants and others with expertise in coastal hazard and flood modeling. Bob will convene the MTC over the course of the development of the TMM through calls and webinars as appropriate.

Discussion highlights

Additional clarity on approaches and objectives of different modeling efforts and supporting tools. There was a discussion emphasizing a lack of clarity, at the local level, around the differences among sea-level rise modeling efforts and among the tools and guidance products that are based on those models (e.g., the NOAA Sea-Level Rise Viewer, CoSMoS, CalAdapt). There was interest in going beyond the traditional compare and contrast presentation of tools and modeling approaches, such as providing a more in-depth rationalization and justification for the different modeling approaches, the resulting outputs, and the implications of these differences for planning. The project team will explore how to address this need within the scope and framing of this project. While thoroughly addressing this need may be outside the scope of this grant's activities, it's an important point and one that may be addressed in the future collaborations by project partners and other stakeholders. At the very least, this project should avoid adding to existing confusion about the range of sea-level rise tools available.

Addressing geomorphic responses, i.e., erosion and shoreline change, in the Technical Methods Manual. The Comprehensive Report will provide general information about the effects of erosion, shoreline change, and other geomorphic processes. There was a discussion, however, as to how these processes might be addressed in the context of the Technical Methods Manual, and more specifically, how it might be integrated or accounted for in SIO's modeling methodology. Determining how best to account for geomorphic response in the Technical Methods Manual will fall to the TMMC; however, one proposed approach was to describe a framework to allow geomorphology to be considered when pro-rating existing conditions to future conditions maps. Additionally, providing graphical representation (a functional response curve) of the relationship between total water level and landward extent was one idea that could assist practitioners in adapting the current methodology to account for local site-specific geomorphic parameters.

Developing a process for evaluating project outcomes

Marisa Villarreal, Ocean Science Trust

Marisa Villarreal (Ocean Science Trust) gave a brief presentation that outlined an evaluation process and a set of potential qualitative and quantitative indicators to measure project success. Ocean Science Trust is leading the end-to-end project evaluation that will focus on both the products, and on the processes and approach implemented to achieve them. The success of the project will ultimately be determined by how the project objectives were achieved. Marisa noted that the project evaluation process will be designed with feedback from the Focus group.

Designing an effective evaluation process will require selecting qualitative and quantitative indicators that can measure how we've achieved the project goals and objectives. For example, qualitative indicators would assess how we've addressed findings from the needs assessment, incorporated feedback from Focus Group participants, and revisited goals after key decisions were made. Quantitative indicators might attempt to measure the reach and impact of the final products, how often products are being used, and for which conditions and scenarios. Marisa presented the idea of distributing a survey as an approach for evaluating the project's effectiveness. This survey would ask key audiences (i.e., the project team, Focus Group participants, those interviewed for the Science Needs Assessment) to answer a series of questions that would directly assess how well the project objectives had been achieved.

Focus Group members noted that tracking partnerships and connections established throughout the project could be a potential metric for an evaluation process, and that getting perspectives and ideas for evaluation processes from others doing similar projects might be helpful to formulate and solidify an project evaluation plan.

Next steps and action items

- **Technical Methods Manual:** Bob Battalio (ESA) will assemble and convene a Technical Methods Manual Committee to advise the content of the Technical Methods Manual.
- **Comprehensive Report:** Ocean Science Trust will revise the Comprehensive Report outline based on this meeting's discussion and will provide sections to project partners for the initial draft. Focus Group members may be contacted to help review specific sections relevant to their expertise.
- **Project evaluation process:** In the coming months Ocean Science Trust will outline an evaluation plan to present and discuss at the next and final Focus Group meeting.
- **Opportunities for dissemination and outreach:** The project team will continue to track opportunities for disseminating and communicating about the project and its products. The team will look to the Focus Group to identify events and channels within their professional network where there is an opportunity to promote the project and its products.

Appendix A: Agenda

Sea Level Rise and Floodplain Management Project

Focus Group Meeting #2 Draft Agenda

March 18, 2015, 10:00 am – 2:00 pm

2101 Webster Street, Suite 1900, Oakland, CA 94612

Room: AECOM Office Main Conference Room

Meeting Goals:

- Determine requirements and specifications of proposed tiered product series
- Define audiences and platforms for dissemination and uptake of proposed products

10:00 ***Coffee and Pastries***

10:30 **Welcome and Introductions**
Project overview
Recap of last meeting
Meeting goals

11:00 **Tiered Product Series**
Using Science Needs Assessment key findings to scope tiered products
- Quick Guide Supplement
- Comprehensive Report
- Technical Methods Manual

11:30 **Comprehensive report**
Discuss outline
Determine process for review/feedback
Identify approach for product rollout

12:00 **Lunch break** (food provided)

12:30 **Technical Methods Manual**
Discuss approach and relationship to physical modeling
Determine breakout groups and next steps for collaboration and production
Identify approach for product rollout

1:30 **Project Evaluation**
Discuss approach to define and measure success

1:45 **Additional Discussion and Next Steps**

2:00 ***Meeting Adjourn***

Appendix B: Descriptive table of tiered product series

	Comprehensive Report	Technical Methods Manual	Quick Guide Coastal Supplement
Function	To provide a more comprehensive narrative or summary of the project components and incorporate key information needs identified in the Needs Assessment and Focus Group meetings.	To provide a guide for local communities (planners and technical practitioners) that connects SIO modeling outputs to FEMA hazard mapping guidelines. Also presents SIO modeling methodology in a way that allows replication at additional geographic sites.	To provide a high level overview on sea-level rise and floodplain management in the context of the NFIP and in the format as the rest of *The Quick Guide*.
Content	In addition to providing information on local floodplain management in the context of the NFIP and other future conditions mapping initiatives, it would also provide information on related coastal processes, a summary of needs assessment findings, and SIO modeling efforts, and reference additional resources for sea-level rise planning and management. *(~15 pages in length)*	Will detail SIO methods and present them in a way that allows city and county planners and technical practitioners to reproduce analyses in other regions. It will also discuss modeling in the context of FEMA open coast mapping guidelines, and include an evaluation of approaches to relate SIO modeling (and potentially other models) to existing FEMA flood maps to estimate future flood conditions. *(~ 30 pages in length)*	It will include an explanation of current conditions mapping and future conditions mapping as it relates to the NFIP, an explanation of FEMA Flood Insurance Rate Maps (FIRMs), a brief discussion of the ways in which other sea-level rise planning tools and resources could support future condition mapping in the context of the NFIP, informational resources and conceptual diagrams of coastal erosion and shoreline changes and how these processes relate to coastal flooding from sea-level rise. *(~ 5-10 pages in length)*
Audience	Local floodplain managers, city and county planners, coastal flooding and hazard mitigation program coordinators, policy and decision-makers within the state and beyond.	Local (municipal) planners, environmental managers, the technical practitioners (i.e., consultants) that help implement their work.	Floodplain managers (high-level), city administrators, property owners.

Appendix C: Sea-Level Rise and Floodplain Management Comprehensive Report Outline [Draft, will be further populated]

Red text signifies input from Focus Group Meeting participants

1. Report goals
2. Background
    - 2.1. Decision context
    - 2.2. Needs Assessment purpose and findings
    - 2.3. Complementary products
        - 2.3.1. Quick Guide supplement
        - 2.3.2. Technical Methods Manual
3. National Flood Insurance Program
    - 3.1. FEMA Flood Insurance Rate Maps
    - 3.2. Future conditions mapping
        - 3.2.1. Climate change and the Community Rating System
        - 3.2.2. Technical Mapping Advisory Committee
        - 3.2.3. FEMA San Francisco Pilot
        - 3.2.4. Other examples of future conditions mapping (e.g., riverine)
        - 3.2.5. Executive Order (13690)
4. Science of sea level rise and related coastal processes
5. California sea level rise resources
    - 5.1. Guidance Documents
        - 5.1.1. CO-CAT Sea Level Rise Guidance
        - 5.1.2. Other examples relevant to other states
        - 5.1.3. West Coast Governor's Alliance guidance document
    - 5.2. Mapping products and tools
    - 5.3. Incentive programs and resources (include funding sources)
        - 5.3.1. Hazard mitigation grants
        - 5.3.2. CRS Discount or premium reductions
        - 5.3.3. Planning (required vs. optional, timing of plan updates, i.e., General Plan)
6. Appendices to consider
    - 6.1. Template to update floodplain management ordinance to include future conditions maps
    - 6.2. CRS application template from the Town of Barnstable Massachusetts

Appendix D: Audiences for tiered products [Draft, will be further populated]

Product	Venues	Websites	Other Considerations
Quick Guide Coastal Supplement	• Product release workshops, one in Southern California, one in Northern California for local floodplain managers to be hosted by DWR • NFIP community assistance visits • Floodplain Management Association Annual Meeting in September in Palm Springs • Flood Preparedness week	• Department of Water Resources • Ocean Science Trust • Floodplain Management Association • FEMA • CAL OES	
Comprehensive Report	• Product release workshops, one in Southern California, one in Northern California for local floodplain managers to be hosted by DWR • NFIP community assistance visits • Floodplain Management Association Annual Meeting in September in Palm Springs	• Department of Water Resources • Ocean Science Trust • Floodplain Management Association • FEMA • CAL OES • California Climate Change Portal, Department of Natural Resources	
Technical Methods Manual	• Floodplain Management Association Annual Meeting in September in Palm Springs	• Department of Water Resources • Ocean Science Trust • Floodplain Management Association • FEMA • CAL OES	• Applied journals • Practitioner conferences