



A California Joint Powers Agency

Member Agencies

Fred Shaw
City of Carpinteria

Kyle Richards
City of Goleta

Carmen Ramirez
City of Oxnard

Steven Gama
City of Port Hueneme

Christy Weir, Vice-Chair
City of San Buenaventura

Eric Friedman
City of Santa Barbara

Gregg Hart, Chair
Das Williams
County of Santa Barbara

Steve Bennett
John Zaragoza
County of Ventura

Executive Director
Marc Beyeler

Santa Barbara Address:
105 East Anapamu, Suite 201
Santa Barbara, CA 93101

Ventura Address:
501 Poli St.
P.O. Box 99
Ventura, CA 93001

Email:
Office@Beacon.ca.gov

Website:
<http://www.beacon.ca.gov>

Agenda

NOTICE MEETING

BEACH EROSION AUTHORITY FOR CLEAN OCEANS AND NOURISHMENT (BEACON)

September 18, 2020

NOTICE IS HEREBY GIVEN of a **MEETING** of the Beach Erosion Authority for Clean Oceans and Nourishment (BEACON). The date, time, and place of the meeting shall be as follows:

DATE: Friday September 18, 2020
TIME: 9:00 AM
PLACE: TELECONFERENCE (see details below)

The agenda of business to be conducted is below.

Gregg Hart, Chairperson
BEACON
Date: September 18, 2020

Per guidance of California Department of Public Health and the California Governor's Stay at Home Executive Order N-33-20 issued on March 19, 2020 to protect the health and well-being of all Californians and to establish consistency across the state in order to slow the spread of COVID-19, BEACON will no longer provide in-person participation.

The following alternative methods of participation are available to the public:

- 1. You may observe the live meeting of the Board of Directors via Zoom Meeting <https://us02web.zoom.us/j/83421816382>
Meeting ID: 834 2181 6382
For audio-dial: 13017158592
Code: 83421816382**
- 2. You may call in to listen live to the Board of Directors meeting by dialing 13017158592 with code 83421816382**
- 3. If you wish to make a general public comment or to comment on a specific agenda, the following methods are available:**
 - a. Distribution to the Board. Submit comments via email to Staff@Beacon.ca.gov prior to 5:00 p.m. on September 17, 2020, or through mail to BEACON at 501 Poli Street, Ventura, Ca 93001 to be received no later than 5:00 p.m. on Thursday, September 17, 2020. Your comment will be placed into the record and distributed appropriately.**



- b. Read into the record at the meeting. Submit comments of 250 words, or less, via email to Staff@Beacon.ca.gov prior to 5:00 p.m. on Thursday, September 18, 2020 prior to the Board meeting. Please indicate if you would like to make a general public comment, a comment on a specific agenda item, or both. Please state in your email, or mail, if you would like the comment "read into the record." Every effort will be made to read your comment into the record, but some comments may not be read due to time limitations. Comments timely received on an agenda item will be placed into the record and distributed accordingly.**
- c. By Zoom. Log onto Zoom as described above. The meeting will be controlled by the BEACON Chair, Mr. Gregg Hart. If you wish to make a comment during the meeting, please raise your hand using the Zoom instructions on your computer. By using the typed messaging capability of Zoom you should also indicate to the Chair which Agenda Item you wish to speak on or if you wish to make a general comment that is not specific to an Agenda Item. BEACON Staff will make every effort to call you during the indicated item so that you may comment.**

In compliance with the Americans with Disabilities Act, individuals needing special accommodations to participate in the meeting should contact BEACON at least three working days prior to the meeting.

MEETING AGENDA

- 1. Administrative Items**
 - A. Call to Order, Roll Call and Introductions – Gregg Hart**
 - B. Approval of Agenda and Filing of Certificate of Agenda Posting**
 - C. Consideration and Approval of Minutes of the BEACON Meetings held on July 24, 2020.**
- 2. Public Comment and Other Matters not on the Agenda**
- 3. Presentations –**
 - A. Report on Regional Climate and Sea Level Rise Adaptation and City of Santa Barbara Presentation on Draft Sea-Level Rise Adaptation Plan**

Recommended Actions:

- i. Receive a presentation from BEACON Staff on Regional Sea Level Rise (SLR) Adaptation needs and opportunities;
- ii. Direct BEACON Staff to develop a Regional Adaptation Policies report; and
- iii. Receive a presentation from the City of Santa Barbara and provide comments on the City's Draft Sea-Level Rise Adaptation Plan;
- iv. Approve and authorize the Chair to execute a comment letter on the City of
- v. Santa Barbara's Draft Sea-Level Rise Adaptation Plan regarding several potential region-level partnership opportunities (Exhibit 1); and
- vi. Determine the above actions are not a "Project" under the California Environmental Quality Act (CEQA) pursuant to CEQA guideline 15378(b)(5) because they are an administrative activity that will not result in direct or indirect physical changes in the environment.



4. Projects – Projects Update

A. Santa Barbara Debris Basin Grant Project

Recommended Actions:

- i. Receive a presentation on status of the Santa Barbara Debris Basin Grant Project;
- ii. Approve, ratify, and authorize the Executive Director to execute Amendment No. 1 to the Grant Agreement with the Ocean Protection Council (OPC) for the Santa Barbara County Debris Basin Removal Project to extend the term through March 30, 2023 and to re-define the scope of the project without a change in the grant amount of \$539,000 (Attachment 1);
- iii. Approve and authorize the Executive Director to execute a Cooperative Agreement with Santa Barbara County for the Santa Barbara County Debris Modification Project, similar to the attached, to provide environmental, design and construction services for an amount not to exceed \$539,000 with a period of performance from October 1, 2020 to March 30, 2023, upon concurrence of legal counsel (Attachment 2).

5. BEACON Organization and Program

A. Board Member Reports

Directors are invited to provide reports and updates on items of interest in their County or City.

B1. BEACON Organization – BEACON Science Support

Recommended Actions:

- i. Receive a Staff Report on Science Support Actions;
- ii. Request the Chair to convene a Science Advisory Committee, appoint the initial Co-Chairs and committee members for a term of 2 years; and thereafter, that the Board confirm the appointments made by the Chair;
- iii. Approve and adopt the Bylaws for the Science Advisory Committee (Exhibit 1);
- iv. Provide notice of cancellation for the agreement with Dr. Doug George for science support services making termination effective October 30, 2020 in accordance Section VI of the agreement; and
- v. Approve and authorize the Executive Director to execute a Cooperative Agreement with the University of California-California Sea Grant in an amount not to exceed \$15,000.00, similar to the attached, to assist BEACON executive staff in coordinating the activities of the Science Advisory Committee with a period of performance from October 30, 2020 through June 30, 2021, upon concurrence of legal counsel (Exhibit 2).



B2. BEACON Purchasing Policy

Recommended Actions:

- i. Approve and adopt a BEACON Purchasing Policy (Exhibit 1); and
- ii. Adopt Resolution 2020-1 designating the Executive Director to act as BEACON's Purchasing Officer in accordance with the BEACON Purchasing Policy. (Exhibit 2).

B3. Appointment of BEACON Special Projects Staff

Recommended Actions:

- i. Receive a Staff Report on Special Projects Staff; and
- ii. Adopt Resolution 2020-2 appointing Brian Brennan as Special Projects Volunteer Staff for a period up to June 30, 2021 (Exhibit 1).

C1. Auditor-Controller Budget Actions and Financial Reports – **NO ITEMS**

6. Executive Director's Report and Communications

The Executive Director will report on activities and achievements of BEACON, upcoming events of interest to the Board of Directors and the public, and general status of BEACON major projects.

Upcoming November 20, 2020 Meeting Agenda:

- a. BEACON Regional SLR Adaptation Strategy-Member Agency Presentation
- b. BEACON Strategic Planning Goals and Objectives
- c. BEACON Legislative Priorities
- d. Projects Updates

Adjourn to next regular meeting, November 20, 2020 at 9:00 AM in Carpinteria City Hall, 5775 Carpinteria Ave, Carpinteria, CA. 93013 (unless otherwise notified).

Late Distribution of Materials

Any disclosable public records related to an open session item on a regular meeting agenda and distributed by the City Clerk to all or a majority of the members of the BEACON Board less than 72 hours prior to that meeting are available for inspection in the City Clerk Office, at 5775 Carpinteria Ave, Carpinteria, CA. 93013 and on the Internet at: BEACON.CA.GOV.

Any written ex-parte communication subject to disclosure by members of the BEACON Board may be published online as an attachment to the corresponding item.



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STAFF REPORT

Meeting Date: September 18, 2020
Agenda Item: 1B

To: BEACON Board of Directors
Fr: Executive Director

Date: September 10, 2020

Subject: Approval of Agenda and Filing of Certificate of Agenda Posting

RECOMMENDED ACTIONS:

Approve and File.



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STAFF REPORT

Meeting Date: September 18, 2020
Agenda Item: 1C

To: BEACON Board of Directors
Fr: Executive Director

Date: September 10, 2020

Subject: Consideration and Approval of Minutes of BEACON Meeting held
July 24, 2020

RECOMMENDED ACTIONS:

Approve and File.

BEACON BOARD OF DIRECTORS' MEETING MINUTES

DATE: Friday, July 24, 2020
TIME: 9:00 AM
PLACE: TELECONFERENCE

Item	1	Call to Order, Roll Call and Introductions – Chair, Gregg Hart.
Minutes/ Actions:		<p>Directors Present:</p> <ul style="list-style-type: none"> • Gregg Hart (County of Santa Barbara) • Das Williams (County of Santa Barbara) • Steve Bennett (County of Ventura) • John Zaragoza (County of Ventura) • Christy Weir (City of Ventura) • Eric Friedman (City of Santa Barbara) • Fred Shaw (City of Carpinteria) • Kyle Richards (City of Goleta) • Carmen Ramirez (City of Oxnard) • Steve Gama, (City of Port Hueneme)
Item	1B	Approval of Agenda and Filing of Certificate of Agenda Posting Action: Approve and file.
Minutes/ Actions:		The Agenda was unanimously approved by the Board. Moved by Shaw / Second by Weir.
Item	1C	Consideration and Approval of Minutes of the BEACON Meetings held on January 24, 2020. Action: Approve and file.
Minutes/ Actions:		The Board unanimously approved the minutes as posted. Moved by Richards / Second by Shaw.
Item	2	Public Comment and Other Matters not on the Agenda Receive public comments.
Minutes/ Actions:		None.
Item	5A	BEACON Organization and Program - Board Members Reports.
Minutes/ Actions:		<ul style="list-style-type: none"> • Director Shaw reported that in compliance with COVID restrictions, the City of Carpinteria closed its beaches for the July 4 weekend along with beach parking lots. Mr. Shaw also indicated that there were some firework instances. • Director Weir reported that the City of Ventura has had recent issue with encounters with juvenile Great White Sharks. As a result, Junior Lifeguard swims had to be cancelled. Mr. Brennan responded that many of Great Whites are being tagged now and therefore their visibility is more evident. Director Ramirez added that many sharks are in great danger now as threatened species. • Director Friedman reported that the City of SB had restarted its SLR Adaptation Plan outreach effort. The City is working on Coastal Commission process issue re/ the plan. • Director Gama congratulated the BEACON organization for a successful executive transition. Mr. Gama also reported that Port Hueneme continues to be severely impacted by sediment transport issues and the same goes for neighboring Pt Mugu and the Port of Port Hueneme. Other affected entities need to participate in the BEACON team such as the Navy. Mr. Gama also indicated that the Port Hueneme dredge cycle is supposed to commence again in September, and he is excited to move forward hand in hand with BEACON to secure maximum funding. • Director Zaragoza wished to remind our constituents to keep wearing masks and to continue to work hard to reduce COVID cases and thereby allow the economy to open up sooner.

BEACON BOARD OF DIRECTORS' MEETING MINUTES

DATE: Friday, July 24, 2020
TIME: 9:00 AM
PLACE: TELECONFERENCE

Item	5B1	<p>BEACON Organization – BEACON Science Strategy Recommended Action: i. Receive Staff Report on BEACON Science Support, including renewing Professional Services Agreement with Dr. Douglas George to provide Science Advisor services and describing staff efforts to organize a Science Advisory Panel.</p>
Minutes/ Actions:		<p>Executive Director Marc Beyeler reported that since the departure of Dr. Bailard from the BEACON Team, two actions have been initiated. The first was to hire Dr. Doug George to advise the science path forward. The second was to establish a BEACON Group of Science Advisors. The Science Advisors Group will:</p> <ul style="list-style-type: none"> • identifying science support resources, • developing ways to better integrate science into its policy and decision-making, • identifying data collection and scientific research initiatives that could benefit BEACON programs and policies, and that BEACON should support, • collaborating with academic and agency partners on new science initiatives, • providing up-to-date science data and research results to regional and local program managers; and • where needed and appropriate, providing scientific advice on new BEACON projects evaluations. <p>The next steps include: 1) recruiting and confirming the advisor leadership, 2) finalizing the group purposes and charter, and 3) recruiting the initial members of the group. Identifying scientific expertise to be consulted on project evaluations.</p> <ul style="list-style-type: none"> • Director Weir asked if members of the advisory panel will be willing to give time to the public – for example it would be useful to have scientific experts at the Surf Riders Meeting on plastics. • Director Hart asked that the Board also have an opportunity to interface with the Science Advisory Group. • Director Gama suggested that the Science Advisory Group periodically report directly to the Board. • Executive Director Beyeler reported that the Science Advisory Group is included in the BEACON Strategic Plan (CRSMP). <p>BOARD ACTIONS: The Board approved unanimously the Recommended Action. Moved by Zaragoza /Second by Shaw.</p>

BEACON BOARD OF DIRECTORS' MEETING MINUTES

DATE: Friday, July 24, 2020
TIME: 9:00 AM
PLACE: TELECONFERENCE

Item	5B2	<p>BEACON Organization – Membership Assessments.</p> <p>Recommended Action:</p> <p>i. Receive a Staff Report on member dues.</p> <p>ii. Adopt an increase to voting member assessments (membership dues) by 100% for fiscal year 2020-2021 to provide an additional \$152,865 in revenue (Exhibit I). (Requires unanimous approval (10/10th vote).</p>
Minutes/ Actions:	<p>Mr. Marc Beyeler reported that the executive transition has been a long process and journey with much discussion. The biggest issue has been how to fund the Executive Director position. The Board has previously asked for a budget to support the Executive Director position which in turn has resulted in the proposal to increase membership dues while maintaining ongoing BEACON activities. The recommendation on the table is to increase membership dues by 100%. Mr. Beyeler reported that as of 11 PM on Monday night, each member agency has approved the 100% increase in dues (160% increase for City of Port Hueneme in order to bring it in alignment to the “Small City” Rate). This outcome is very encouraging in these difficult times and a sure endorsement of the regional importance of BEACON.</p> <ul style="list-style-type: none"> • Chair Hart wished to thank Director Gama for his support and leadership within the City of Port Hueneme. • Director Zaragoza wished to acknowledge Supervisor Bennett and Brian Brennan for all they have done over the last twenty years as well as acknowledge the retired Director, Jon Sharkey. • Director Shaw agreed that the early work put in by Director Bennett and Brian Brennan was critical to the direction BEACON is now going in. • Director Gama also thanked Director Bennett and Brian Brennan, without whose work we would not be here today. • Director Richards echoed the sentiments of the other Directors and thanked Director Bennett and Brian Brennan and indicated that now was the time to fund the full time Executive Director. • Director Ramirez also thanked Director Bennett and Brian Brennan. It is a difficult time, but we have to be realistic. • Director Bennett stated that it was really Brian Brennan that did all the work. He stepped up when we needed him. • Brian Brennan thanked the Board for their kind remarks and indicated that he will stay involved. • Chair Hart also indicated that we will now have a voice at the State level with State Legislator Bennett. <p>BOARD ACTIONS: The Board approved unanimously the Recommended Action. Moved by Ramirez / Second by Shaw.</p>	

BEACON BOARD OF DIRECTORS' MEETING MINUTES

DATE: Friday, July 24, 2020

TIME: 9:00 AM

PLACE: TELECONFERENCE

Item	5C1	Auditor-Controller Budget Actions and Financial Reports Recommended Actions: i. Receive and file the Budget-to-Actual report for the year-to-date period ending June 30, 2020 (Exhibit I) ii. Receive and approve Proposed BEACON Budget for Fiscal Year 2020-2021 (Exhibit II); and iii. Approve and authorize the Auditor-Controller's Office to adjust contingency for the fiscal year 2020-2021 budget where the fiscal year 2019-2020 actual year-end closing fund balance differs from the budget estimate.
Minutes/ Actions:	Mr. Carlos Maldonado of the ACO presented the three ACO items: Budget to Actual report, proposed BEACON Budget for FY2021; and adjustment of contingency for end of fiscal year accounting. BOARD ACTIONS: BOARD ACTIONS: The Board approved unanimously the Recommended Action. Moved by Zaragoza /Second by Weir.	

BEACON BOARD OF DIRECTORS' MEETING MINUTES

DATE: Friday, July 24, 2020
TIME: 9:00 AM
PLACE: TELECONFERENCE

Item	5C2	<p>Approve and Authorize the Chair to Sign the FY 2020-21 Annual Staff/Consultant Agreements</p> <p>Recommended Actions:</p> <ol style="list-style-type: none"> i. Approve, ratify, and authorize the Chair to execute an Agreement with MBA Consultants for Marc Beyeler to provide Executive Director services in an amount not to exceed \$134,900 with a period of performance from July 1, 2020 through June 30, 2021. ii. Approve, ratify, and authorize the Chair to execute an Agreement with Ventura County Auditor-Controller's office to provide accounting services in an amount not to exceed \$15,000 with a period of performance from July 1, 2020 through June 30, 2021. iii. Approve, ratify, and authorize the Chair to execute an Agreement with Santa Barbara County to provide legal services in an amount not to exceed \$12,000 with a period of performance from July 1, 2020 through June 30, 2021. iv. Approve, ratify, and authorize the Chair to execute an Agreement with COM3 Consulting Incorporate to provide program manager services in an amount not to exceed \$49,500 with a period of performance from July 1, 2020 through June 30, 2021. v. Approve, ratify, and authorize the Chair to execute an Agreement with Pamela Baumgardner to provide webmaster and social media services in an amount not to exceed \$2,000 with a period of performance from July 1, 2020 through June 30, 2021. vi. Approve, ratify, and authorize the Chair to execute an Agreement with Dr. Douglas George to provide science advisor services in an amount not to exceed \$15,000 with a period of performance from July 1, 2020 through June 30, 2021. vii. Approve, ratify, and authorize the Chair to execute an Agreement with Fedak and Brown to provide audit services in an amount not to exceed \$10,380 with a period of performance from July 1, 2020 through February 28, 2021.
Minutes/ Actions:		<p>Mr. Marc Beyeler indicated that BEACON does not employ staff. All required services, including that of Executive Director, must be provided by consultants and member agency specialist staff. The annual contracts listed in the recommended actions address all the required expertise to keep BEACON running as a viable agency.</p> <ul style="list-style-type: none"> • Director Weir asked if the budget for the Program Management services were not to exceed. • Mr. Beyeler responded that they were not to exceed. However, if a significant new task was required for the Program Management consultant within the fiscal year, then an amendment to the contract could need to be considered. This same logic applies to all the annual contracts. • Santa Barbara County Counsel's Office stated it does not review the legal services agreement on behalf of BEACON. However, Ventura County Counsel's Office reviewed the agreement in 2018. Since the last time Ventura reviewed the agreement, the fiscal year has been updated, and for this year and the rate increased from \$140 per hour to \$150 per hour. The legal services agreement has not had a rate increase since prior to 2011. Otherwise, no substantive changes have been made since Ventura's review. <p>BOARD ACTIONS: BOARD ACTIONS: The Board approved unanimously the Recommended Action.</p> <p>Moved by Zaragoza /Second by Weir.</p>

BEACON BOARD OF DIRECTORS' MEETING MINUTES

DATE: Friday, July 24, 2020
TIME: 9:00 AM
PLACE: TELECONFERENCE

Item	6 Executive Director's Report and Communications
Minutes/ Actions:	<p>Mr. Beyeler reported that the Board had not had any reports on specific projects since COVID began. He indicated that he would bring some project reports to the Board at the September Board Meeting. In addition, in September we will have a presentation from the City of SB on their SLR Adaptation Plan and a separate report on regional climate and SLR adaption.</p> <p>Mr. Beyeler also indicated that a future agenda item will be developed discussing funding opportunities and how-to best leverage BEACON.</p> <ul style="list-style-type: none">• Director Friedman indicated that he would like to see a whitepaper on sediment transport issues. ACTION.• Director Shaw requested that the whitepaper be sent to all Board Directors. ACTION.• Director Gama indicated that there is evidence everywhere of sediment transport out of the area and asked if the Board can get statistics on the quantity of sediment that is <u>not</u> going to the coast? ACTION.• Director Gama asked for recommendations on how to involve the Port Districts and the Navy more with BEACON. ACTION.• Director Friedman reported that Karl Treiberg had retired from the City of Santa Barbara Waterfront Department. The newly appointed Director of the Waterfront Department is Mike Wiltshire.

Adjourn to next regular meeting September 18, 2020 at 9:00 AM by Teleconference or Video Conference.

Meeting Minutes by Gerald Comati, Program Manager, BEACON.



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STAFF REPORT

Meeting Date: September 18, 2020
Agenda Item: 2

To: BEACON Board of Directors
Fr: Executive Director

Date: September 10, 2020

Subject: Public Comment and Other Matters not on the Agenda

RECOMMENDED ACTIONS:

Receive Public Comments.



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STAFF REPORT

Meeting Date: September 18, 2020
Agenda Item: 3A

To: BEACON Board of Directors
From: Executive Director

Date: September 10, 2020

Subject: BEACON Regional SLR Adaptation

RECOMMENDED ACTIONS:

- i. Receive a presentation from BEACON Staff on regional Sea Level Rise (SLR) Adaptation needs and opportunities;
- ii. Direct BEACON Staff to develop a regional adaptation Policies document; and
- iii. Receive a presentation from staff of the City of Santa Barbara and provide comments on the City's Draft Sea-Level Rise Adaptation Plan;
- iv. Approve and authorize the Chair to execute a comment letter on the City of Santa Barbara's Draft Sea-Level Rise Adaptation Plan regarding several potential region-level partnership opportunities (Exhibit 1); and
- v. Determine the above actions are not a "Project" under the California Environmental Quality Act (CEQA) pursuant to CEQA guideline 15378(b)(5) because they are an administrative activity that will not result in direct or indirect physical changes in the environment.

DISCUSSION:

In 2016, BEACON staff conducted a survey of BEACON member agency staff to determine how best BEACON could assist local agencies in implementing coastal priorities. Among the important activities identified as priorities, the BEACON survey identified planning for climate change and sea level rise was rated as an important need. In the past few years, BEACON staff have been working with several local jurisdictions, supporting their efforts to develop local vulnerability and adaptation plans and projects, including projects in the cities of Ventura, Carpinteria, and Santa Barbara.



Meeting Date: September 18, 2020
Agenda Item: 3A

In December 2019, the California Legislative Analyst's Office (LAO) issued a report on coastal adaptation efforts in California, entitled *Preparing for Rising Seas: How the State Can Help Support Local Coastal Adaptation Efforts* (Attachment 1). The report includes many important conclusions and recommendations of interest to BEACON and to its member agencies. In August 2020, the LAO issued an updated report on local coastal adaptation in California (Attachment 2).

The original report noted that “Even though the interrelated effects of SLR make cross-jurisdictional planning essential, local governments lack formal and strategic ways to learn from each other or make decisions together about coastal adaptation issues.” Importantly, the 2019 report highlighted the need for regional-scale adaptation and makes several recommendations addressing regional-scale adaptation, including:

- Establishing and assisting regional climate adaptation collaborative groups to plan together and learn from each other regarding how to respond to the effects of climate change;
- Encouraging development of regional coastal adaptation plans to address key risks that SLR poses to the region, as well as strategies the region will take to address them.;
- Supporting implementation of regional adaptation efforts by contributing funding towards construction of projects identified in regional plans.

In its August 2020 report, the LAO emphasized its original conclusions and made subsequent recommendations for how the state could help strengthen local coastal climate adaptation, including “foster(ing) regional-scale collaboration, and support(ing) local planning and adaptation projects.”

In the Santa Barbara-Ventura central coast region, BEACON has an important role to play in assisting local and regional adaptation efforts. BEACON Staff is recommending that the BEACON Board authorize development of a regional adaptation policies report, building on the local adaptation efforts of BEACON member agencies.

While the LAO reports note that most coastal communities are only in the early stages of preparing for SLR, BEACON member agencies have undertaken many climate and SLR vulnerability and adaptation planning efforts to date.

BEACON Staff is scheduling presentations over the next several meetings from the member agencies that have begun SLR vulnerability and adaptation efforts to date (six of the eight BEACON member agencies) in order to better understand the range of possible regional-scale adaptation actions that BEACON could consider, as the member agency efforts have identified several specific regional-scale adaptation actions that are needed to be further investigated and analyzed. BEACON Staff is proposing to collect these actions into an evaluation matrix and present a report to the BEACON Board as the basis for developing a BEACON Regional SLR Adaptation Policies document.

At this meeting of the BEACON Board, staff of the City of Santa Barbara will make a presentation on the City's Draft Sea-Level Rise Adaptation Plan. The City of Santa Barbara has been developing a Sea-Level Rise Adaptation Plan that identifies areas and public infrastructure of the City vulnerable to sea-level rise and recommends potential actions that the City can take to adapt over time,



Meeting Date: September 18, 2020
Agenda Item: 3A

including actions in cooperation with BEACON and other regional and state partners to plan for and implement adaptation programs and projects. In August, the City released its draft plan for public and agency review and comment and is seeking input from a broad range of stakeholders and partners, including BEACON.

The City staff's presentation will summarize its adaptation planning efforts to date, and suggested adaptation policies and strategies, focusing on those possible adaptation actions that would benefit by regional attention and may involve partnership efforts with BEACON. Potential areas of collaboration include: regional shoreline monitoring; sediment management, beach nourishment, and potential beach berm or dune formation; regional agreement on principles for adaptation; joint grant and funding opportunities; joint studies of case law and adaptation options; and coordinated consultation with state and federal legislators and agencies on regional needs.

Attachments

Attachment 1: LAO Report, Preparing for Rising Seas: How the State Can Help Support Local Coastal Adaptation Efforts-December 2019

Attachment 2: LAO Report, What Threat Does Sea-Level Rise Post to California-Augusts 2020

Attachment 3: Executive Summary, City of Santa Barbara Draft Sea-Level Rise Adaptation Plan

Exhibit 1: Comment letter on the City of Santa Barbara's Draft Sea-Level Rise Adaptation Plan

Preparing for Rising Seas: How the State Can Help Support Local Coastal Adaptation Efforts



Cover Photo: The cover image of high tides along the Embarcadero in San Francisco was taken by Dave Rauenbuehler, @daver6 via Flickr.

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Executive Summary

Important for Coastal Communities to Begin Preparing for Sea-Level Rise (SLR)

California Faces the Threat of Extensive and Expensive SLR Impacts. California's coast could experience SLR ranging from about half of 1 foot by 2030 up to about 7 feet by 2100. Periodic events like storms and high tides will produce even higher water levels and increase the risk of flooding. Rising seas will also erode coastal cliffs, dunes, and beaches which will affect shorefront structures and recreation.

Most Responsibility for SLR Preparation Lies With Local Governments, However, the State Has a Vested Interest in Ensuring the Coast Is Prepared. Most of the development along the coast is owned by either private entities or local governments—not the state. Additionally, most land use policies and decisions are made by local governments, and they are most knowledgeable about their communities. Local governments will need to grapple with which existing infrastructure, properties, and natural resources to try to protect from the rising tides; which to modify or move; and which may be unavoidably affected. However, given the statewide risks, the state can play an important role in encouraging and supporting local efforts and helping to alleviate some of the challenges local governments face.

Many Coastal Communities Are Only in the Early Stages of Preparing for SLR. The progress of SLR preparation across the state's coastal communities has been slow. Moreover, few coastal communities have yet begun implementing projects to respond to the threat of rising seas. Coastal communities must increase both the extent and pace of SLR preparation efforts if California is to avoid the most severe, costly, and disruptive impacts in the coming decades.

Delaying SLR Preparations Will Result in Lost Opportunities and Higher Costs. Planning ahead means adaptation actions can be strategic and phased, helps “buy time” before more extreme responses are needed, provides opportunities to test approaches and learn what works best, and may make overall adaptation efforts more affordable and improve their odds for success. The next decade represents a crucial time period for taking action to prepare for SLR.

Local Adaptation Efforts Face Several Key Challenges

Funding Constraints Hinder Both Planning and Projects. Local governments cite funding limitations as their primary barrier to making progress on coastal adaptation efforts.

Limited Local Government Capacity Restricts Their Ability to Take Action. The novelty of the climate adaptation field makes it hard for local governments to locate and hire individuals with appropriate experience and expertise.

Adaptation Activities Are Constrained by a Lack of Key Information. Local governments cite a need for additional data and technical assistance to help inform their adaptation decisions.

Few Forums for Shared Planning and Decision-Making Impede Cross-Jurisdictional Collaboration. Even though the interrelated effects of SLR make cross-jurisdictional planning essential, local governments lack formal and strategic ways to learn from each other or make decisions together about coastal adaptation issues.

Responding to SLR Is Not Yet a Priority for Many Local Residents or Elected Officials.

Because many California residents are not yet aware of how and when SLR might affect their communities, coastal adaptation actions are not a high priority for them to request from their local governments.

Protracted Process for Attaining Project Permits Delays Adaptation Progress. Achieving regulatory approval for coastal adaptation projects is complicated and takes a long time.

LAO Recommendations for Supporting Local Adaptation Efforts

While our recommendations represent incremental steps that will not be sufficient to address all the anticipated impacts of SLR, they represent prerequisites along the path to more robust statewide preparation.

Foster Regional-Scale Adaptation

- Establish and assist regional climate adaptation collaborative groups to plan together and learn from each other regarding how to respond to the effects of climate change.
- Encourage development of regional coastal adaptation plans to address key risks that SLR poses to the region, as well as strategies the region will take to address them.
- Support implementation of regional adaptation efforts by contributing funding towards construction of projects identified in regional plans.

Support Local Planning and Adaptation Projects

- Increase assistance for cities and counties to conduct vulnerability assessments, adaptation plans, and detailed plans for specific projects.
- Support coastal adaptation projects with widespread benefits such as those that pilot new techniques, protect public resources, reduce damage to critical infrastructure, or address the needs of vulnerable communities.
- Facilitate post-construction monitoring of state-funded demonstration projects to learn more about which adaptation strategies are effective.

Provide Information, Assistance, and Support

- Establish the California Climate Adaptation Center and Regional Support Network to provide technical support and information to local governments on adapting to climate change impacts.
- Develop a standardized methodology and template that local governments can use to conduct economic analyses of SLR risks and adaptation strategies.
- Direct the California Natural Resources Agency to review and report back regarding how regulatory permitting processes can be made more efficient.

Enhance Public Awareness of SLR Risks and Impacts

- Require coastal flooding disclosures for real estate transactions to spread public awareness about SLR and allow Californians to make informed decisions about the risks of purchasing certain coastal properties.
- Require that state-funded adaptation plans and projects include robust public engagement efforts to help develop societal awareness about SLR, build acceptance for adaptation steps, and ensure the needs of vulnerable communities are addressed.
- Direct state departments to conduct a public awareness campaign about the threats posed by SLR to develop public engagement in and urgency for taking action.

INTRODUCTION

State’s Climate Change Response Will Require Both Mitigation and Adaptation. In recent years, California has taken steps to limit the effects of climate change by enacting policies and programs to reduce emissions of greenhouse gases. While these efforts—if combined with similar global initiatives—ultimately may constrain the total amount of warming the planet experiences, scientists are conclusive that some degree of climate change already is inevitable. The changing climate will have several consequential effects on California over the coming decades. Indeed, such impacts have already begun. In recent years, the state experienced a severe drought, multiple serious wildfires, and periods of record-breaking heat, all of which scientists suggest likely are harbingers of future conditions. In addition to these more episodic events, science has shown that the changing climate will result in a gradual and permanent rise in global sea levels. Given the significant natural resources, public infrastructure, housing, and commerce located along California’s 840 miles of coastline, the certainty of rising seas poses a serious and costly threat. As such, in the coming years the state will need to broaden its focus from efforts to *mitigate* the effects of climate change to also undertake initiatives centered on how communities can *adapt* to the approaching impacts.

Report Responds to Increasing Legislative Interest in Climate Adaptation. This report responds to increasing legislative interest in determining how the state can best prepare for the impacts of climate change, including sea-level rise (SLR). In recent years, the Legislature has held several hearings on SLR and coastal adaptation, formed two related select committees, and deliberated multiple legislative proposals on these topics. In addition, the Governor and some legislative members have indicated interest in placing a new general obligation bond on the 2020 ballot for voter approval that would provide funding for climate adaptation activities.

Report Focuses on How State Can Support Local Coastal Adaptation Efforts. Although the

risk presented by SLR is an issue of statewide importance, most of the work to prepare for and respond to these changes has to take place at the local level. This is because most of the development along the coast is owned by either private entities or local governments—not the state. Additionally, most land use policies and decisions are made by local governments, and they are most knowledgeable about the needs and specific circumstances facing their communities. However, the state can play an important role in encouraging and supporting local efforts and helping to alleviate some of the challenges that local governments face in preparing for SLR. Given the importance of protecting the state’s residents, economy, and natural resources from considerable damages, this report focuses on how the Legislature can help support and expedite progress in preparing for rising seas at the local level. (While the state will also need to take action to prepare for potential impacts to assets for which it has primary responsibility—like coastal highways and state parks—consideration of those steps is outside the scope of this report.) This focus and our recommendations represent a continuation of the state’s long-standing role in facilitating and incentivizing implementation of state objectives at the local level. While adopting our recommended actions will not be sufficient to address all the projected impacts of SLR, they represent important incremental steps towards greater preparation across the state.

Findings Informed by Extensive Interviews and Research. The findings and recommendations presented in this report are informed by interviews we conducted with over 100 individuals. These interviewees represented local governments from across the state, academic researchers, community groups, nongovernmental organizations, federal agencies, and state departments. We also reviewed relevant reports and academic literature, including several statewide surveys conducted on the topics of coastal adaptation, climate change preparation, and local government planning. The resources we reference within the report are listed in the “Appendix.”

CALIFORNIA FACES THREAT OF RISING SEAS AND TIDES

Coast Will Experience Encroaching Seas in Coming Decades. Climate scientists have developed a consensus that one of the effects of a warming planet is that global sea levels will rise. The degree and timing of SLR, however, is still uncertain, and depends in part, upon whether global greenhouse gas emissions and temperatures continue to increase. **Figure 1** displays recent scientific guidance compiled by the state for how sea levels may rise in various coastal areas of California in the coming decades. As shown, the magnitude of SLR is projected to be about half of 1 foot in 2030 and as much as 7 feet by 2100. The estimates shown in the figure represent the range between how sea levels might rise across the state under two different climate change scenarios. The bottom end of the range reflects the lower bound of a “likely” scenario (with a projected 66 percent

chance of occurring). The top end reflects the upper bound of a higher risk and more impactful scenario (with a projected 1-in-200 chance of occurring). As shown, the range between these scenarios is greater in 2100, reflecting the increased level of uncertainty about the degree of climate change impacts the planet will experience further in the future.

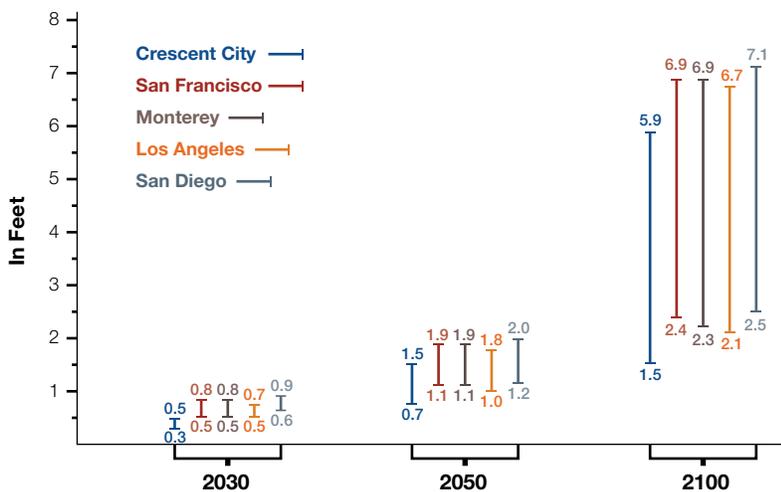
Figure 2 displays a detailed map of how current SLR projections translate into potential flooding in the San Francisco (SF) Bay Area. The map shows flooding projected to occur with 2 feet of SLR combined with a ten-year storm surge (that is, the temporary flood effects from a storm that has a one-in-ten likelihood of occurring in a given year). This combination of events would result in a total water level of over 4 feet. As shown, under this scenario—and given existing shoreline protections

and conditions—many portions of the SF Bay shoreline would become inundated. For example, as highlighted in the map, this would result in severe flooding for Foster City, the Oakland International Airport, and the toll plaza for the SF Bay Bridge in Oakland. This combination of SLR and storm is well within the range of possibilities that could occur within the next 50 years. Combining a significantly high-tide event with SLR would result in even more severe flooding across the region than that shown in this map.

Storms and Future Climate Impacts Could Raise Water Levels Further. Although they would have substantial impacts, the SLR scenarios displayed in Figure 1 likely *understate* the increase in water levels that coastal communities will actually experience in the

Figure 1

Range of Sea-Level Rise Projections for the California Coast^a



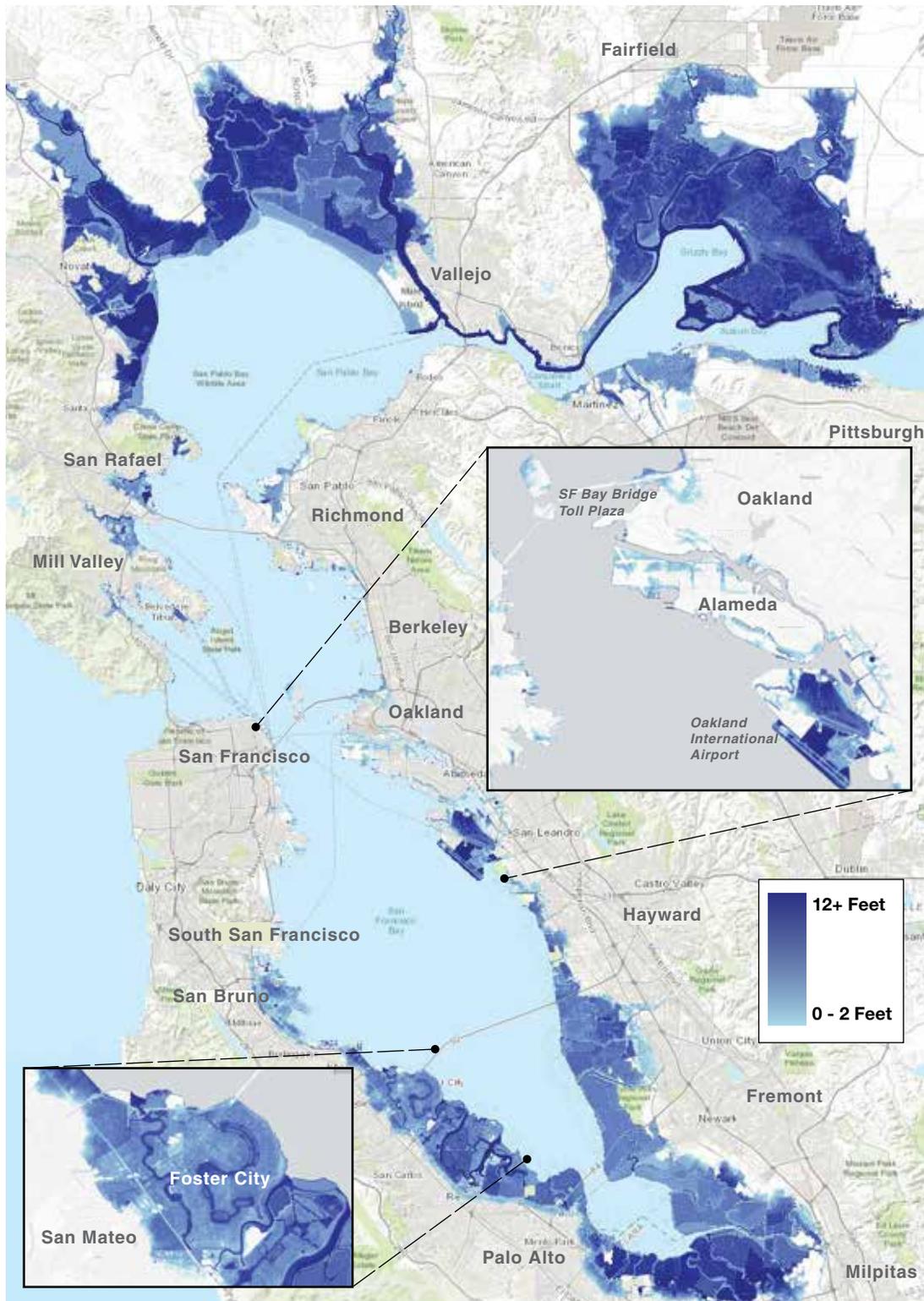
^a Estimates represent the range between “likely” scenarios with a 66 percent chance of occurring and scenarios with a 1-in-200 chance of occurring. Range does not include estimates associated with “extreme” scenarios incorporating the effects of potential ice loss from the West Antarctic Ice Sheet, which are significantly higher.

From the *State of California Sea-Level Rise Guidance Document* published by the California Natural Resources Agency and the California Ocean Protection Council.



Figure 2

Potential Impacts of Sea-Level Rise (SLR) and Flooding in the San Francisco Bay Area
Predicted Shoreline Flooding With 2 Feet of SLR and a Ten-Year Storm Surge^a



^a A ten-year storm surge represents the temporary flood effects from a storm that has a one-in-ten likelihood of occurring in a given year.

Map courtesy of the San Francisco Bay Conservation and Development Commission's Adapting to Rising Tides Bay Shoreline Flood Explorer.

SF = San Francisco



coming decades. This is because climate change is projected to contribute to more frequent and extreme storms, and the estimates shown in Figure 1 do not incorporate potential increases in sea levels caused by storm surges, exceptionally high “king tides,” or El Niño events. These periodic events could produce notably higher water levels than SLR alone. Moreover, the data displayed in the figure do not include significantly higher estimates associated with “extreme” scenarios that incorporate the effects of potential ice loss from the West Antarctic Ice Sheet. The likelihood of these severe scenarios occurring is still uncertain, but possible. If there is considerable loss in the polar ice sheets, scientists estimate that San Francisco could experience over 10 feet of SLR by 2100.

SLR Impacts Have Potential to Be Extensive and Expensive. The potential changes in sea levels and coastal storms will impact both human and natural resources along the coast. These events will increase the risk of flooding and inundation of buildings, infrastructure, wetlands, and groundwater basins. A 2015 economic assessment by the Risky Business Project estimated that if current global greenhouse gas emission trends continue, between \$8 billion and \$10 billion of existing property in California is likely to be underwater by 2050, with an additional \$6 billion to \$10 billion at risk during high tide. A recent study by researchers from the U.S. Geological Survey (USGS) estimates that by 2100, roughly 6 feet of SLR and recurring annual storms could impact over 480,000 California residents (based on 2010 census data) and \$119 billion in property value (in 2010 dollars). When adding the potential impacts of a 100-year storm, these estimates increase to 600,000 people and over \$150 billion of property value.

Rising seas will also erode coastal cliffs, dunes, and beaches—affecting shorefront infrastructure, houses, businesses, and recreation. The state’s *Safeguarding California Plan* cites that for every foot of SLR, 50 to 100 feet of beach width could be lost. Moreover, a recent scientific study by USGS researchers predicted that under scenarios of 3 to 6 feet of SLR—and absent actions to mitigate such impacts—up to two-thirds of Southern California beaches may become

completely eroded by the year 2100. Such a loss would impact not only Californians’ access to and enjoyment of key public resources, but also beach-dependent local economies. While no entity has completed a comprehensive economic assessment of beach-related recreation across the state, a 2016 report by the Center for the Blue Economy estimated that California’s ocean economy—including tourism, recreation, and marine transportation—is valued at over \$44 billion per year.

SLR Impacts Could Have Fiscal Implications at Both Local and State Levels. The potential impacts of SLR also could have negative impacts on the economy and tax base—both locally and statewide—if significant damage occurs to certain key coastal infrastructure and other assets. These include ports, airports, railway lines, beaches and parks used for recreation, and high-technology companies located along the SF Bay. Furthermore, if property values fall considerably from the increased risk and frequency of coastal flooding, over time this will affect the annual revenues upon which those local governments depend. To the degree local property tax revenues drop, this also could affect the state budget because the California Constitution requires that losses in certain local property tax revenues used to support local schools be backfilled by the state’s General Fund.

SLR Threatens Vulnerable Populations. Not all of the assets threatened by SLR are expensive homes and affluent communities. In contrast, many communities with more vulnerable populations also face the risk of more frequent flooding. Such populations include renters (who are less able to prepare their residences for flood events), individuals not proficient in English (who may not be able to access critical information about potential SLR impacts), residents with no vehicle (who may find it more difficult to evacuate), and residents with lower incomes (who have fewer resources upon which to rely to prepare for, respond to, and recover from flood events). For example, a 2012 study conducted by the SF Bay Conservation and Development Commission’s (BCDC) Adapting to Rising Tides Project found that SF Bay Area locations at risk of inundation from SLR included more than 9,000 renter-occupied households,

over 2,500 linguistically isolated households, over 2,000 households with no vehicle, and over

15,500 individuals living in households earning less than 200 percent of the federal poverty level.

COASTAL ADAPTATION ACTIVITIES CAN HELP LESSEN SLR IMPACTS

While the estimates cited above highlight the potential damages, costs, and disruption that SLR could cause, strategies for moderating such impacts exist.

Three Primary Options Exist for Adapting to SLR. The state, coastal communities, and private property owners essentially have three categories of strategies for responding to the threat that SLR poses to assets such as buildings, other infrastructure, beaches, and wetlands. As shown in **Figure 3** (on page 8), they can (1) build hard or soft barriers to try to stop or buffer the encroaching water and **protect** the assets from flooding, (2) modify the assets so that they can **accommodate** regular or periodic flooding, or (3) **relocate** assets from the potential flood zone by moving them to higher ground or further inland. Each of these options comes with trade-offs, as discussed in the figure, and not all strategies will work in every situation. Communities and residents are understandably reluctant to relocate existing properties, as this will be disruptive, expensive, and in some cases not logistically possible. Armoring much of the coast to protect most assets, however, also is not practical. Not only would such an approach be prohibitively expensive and have decreasing effectiveness over the years as more intense wave action migrates inland, it also would disrupt natural erosion processes such that it would cause much of the sand on the state's beaches to disappear.

Selecting which combination of SLR adaptation approaches to use in a particular location is an involved process necessitating scientific research, locally specific information, public and stakeholder input and support, both high-level and detailed planning, and—in many cases—additional funding. Local governments planning for SLR are also

balancing other—and sometimes competing—land use objectives. As we discuss in the box on page 9, SLR presents particular challenges for coastal jurisdictions—and the state—seeking to expand the supply of housing units.

Undertaking Coastal Adaptation Activities Likely Less Costly Than Avoiding Action.

The types of adaptation efforts described in Figure 3 can not only help mitigate disruptive SLR impacts, in many cases they also make sense from a fiscal perspective. That is, while such activities might require up-front investments, the costs of failing to adequately prepare for the impacts of SLR likely would cost even more. Recent research found a strong benefit-to-cost ratio for undertaking mitigation projects ahead of disasters compared to spending on disaster response and recovery. Specifically, a Federal Emergency Management Agency (FEMA)-sponsored study by the National Institute of Building Sciences found that for every \$1 the federal government invested in various types of pre-disaster mitigation activities in recent years, it avoided public and private losses totaling \$6. Designing new structures to be more resilient to natural hazards was also found to be financially advantageous. For example, in the case of riverine flooding, the study estimates that for every extra \$1 spent to build new buildings higher out of the floodplain than international building codes require, \$5 in flood damage-related costs was avoided. While the study was based on retrospective data on other types of disasters and did not consider future SLR-related coastal flooding, similar principles likely apply. That is, investing in adaptation activities that will help to mitigate significant flooding, damage, disruption, and erosion that will otherwise occur from SLR is almost certainly a less costly approach overall compared to not taking such actions.

Figure 3

Three Key Strategies for Adapting to Sea-Level Rise (SLR)

PROTECT

Place hard or soft barrier between development and the sea to reduce exposure to flooding or erosion. Hard protection (“armoring”) consists of constructing physical structures to keep water back, such as seawalls, groins, revetments, and levees. Soft protection consists of efforts to enhance natural infrastructure’s ability to buffer against the water, such as building up sand dunes, adding sand to beaches, and expanding wetlands.



ADVANTAGES

Can allow existing development and infrastructure to remain in place. Can be less costly than other alternatives.

DISADVANTAGES

Hard protection can contribute to beach erosion and increased flooding in adjacent areas. Soft protection likely will become a less viable strategy once sea levels rise to the higher stages of projected levels.

ACCOMMODATE

Modify or design development in ways that will withstand SLR without damage, such as by elevating buildings or infrastructure, floodproofing structures, and building on floating structures.



ADVANTAGES

Can allow existing development and infrastructure to remain in place once modified. Can allow for new development in areas that may face flooding in the future.

DISADVANTAGES

Can be difficult and costly, especially to modify existing development.

RELOCATE

Remove or move existing development to less risky areas and limit the construction of new development in vulnerable areas. This could include physically moving an asset or facility that is at risk, or adopting zoning policies that prohibit new development or require that it be “set back” from potential hazard zones.



ADVANTAGES

Can provide space for beach and wetlands to migrate inland as water rises. Ensures development locations are/will be safe from flooding.

DISADVANTAGES

Can be difficult, costly, or impossible to relocate existing development. Renders certain parcels of land unavailable for development.

SLR Complicates State's Housing Objectives

The potential impacts of sea-level rise (SLR) create complications for a different state and local priority—increasing housing availability and affordability. California faces a serious housing shortage, and the state's coastal areas are experiencing the most acute population growth, high housing costs, and demand for more affordable housing. Our office has estimated that on top of the 100,000 to 140,000 housing units typically built in the state each year, California probably would have to build as many as 100,000 additional units annually—almost exclusively in its coastal communities—to seriously mitigate housing affordability problems. In recent years, the state has implemented a number of measures intended to encourage local governments to build more housing, including providing additional funding and instituting new penalties for jurisdictions that fail to comply with state housing laws.

Flooding caused by SLR poses two serious impediments to coastal jurisdictions seeking to meet these state housing objectives. First, over the coming decades some existing housing units along the coast will experience regular flooding and become uninhabitable. Second, some parcels of land that do not currently contain housing—and therefore may seem like apt locations for new development—also face the likelihood of flooding in future years. While local governments may be reluctant to adopt policies restricting development on these parcels given their current viability, the future hazards make them risky locations to construct new housing. Certain adaptation strategies described in Figure 3 could help to safeguard some existing properties and land parcels from the effects of SLR—including protecting them through armoring, or building or retrofitting structures such that they can accommodate flooding. As described in the figure, however, these strategies come with trade-offs, including costs and effects on adjacent areas. The degree of SLR that is predicted over the next century clearly will affect land use decisions and create additional challenges for local governments—and the state—as they seek to expand housing options for Californians in coastal regions.

LOCAL RESPONSES TO SLR WILL BE KEY TO STATEWIDE PREPAREDNESS

Most Responsibility for SLR Preparation Lies With Local Governments . . . Most of the development along the coast is owned by either private entities or local governments—not the state. Additionally, most land use policies and decisions are made at the local level, and local governments are most familiar with the specific circumstances facing their communities. As such, responsibility to prepare for and respond to the impacts of SLR lies primarily with the affected local communities. Deciding how to confront these challenges and implement the strategies described in Figure 3 will be both difficult and costly. Local governments will need to grapple with which existing infrastructure, properties, and natural resources to try to protect

from the rising tides; which to modify or move; and which may be unavoidably affected.

. . . However, the State Has a Vested Interest in Ensuring the Coast Is Prepared.

As discussed in more detail later in this report, the 1976 California Coastal Act grants the state special jurisdiction over land use decisions along the coast. Specifically, unlike other areas of California, along certain portions of the coast the state possesses the authority to regulate activities that change the intensity of use of land, with the intended goal of balancing development with protecting the environment and public access. This authority, combined with a motivation to minimize costly and traumatic damage for residents

and their property, creates a strong rationale and incentive for the state to help ensure that local jurisdictions plan for and take action to adapt to SLR. Californians could experience serious public health and safety impacts if local governments do not take proper steps to prepare for how SLR will affect certain coastal infrastructure. Such impacts include threats to drinking water (from impacts to coastal groundwater aquifers and water treatment plants, and damage to levees in the Sacramento San Joaquin Delta), sewage treatment, local

transportation infrastructure, and other essential facilities such as hospitals and schools. Moreover, the state is charged with overseeing natural resources on behalf of the public trust and, thus, is responsible for ensuring the preservation of public access to the coast and the health of coastal wetlands, wildlife, and habitats. As discussed earlier, SLR damages also would have fiscal implications, which the state will want to try to minimize.

CALIFORNIA IS IN BEGINNING STAGES OF PREPARING FOR SEA-LEVEL RISE

In this section we discuss how the state, federal, and local governments currently are engaged in preparing to adapt to the impacts of SLR.

State-Level Efforts

Multiple State Departments Have SLR-Related Responsibilities. As summarized in **Figure 4**, a number of state departments are engaged in efforts to prepare for and respond to the impacts of SLR. Additionally, senior-level staff from each of the departments shown in the figure—together with representatives from the Delta Stewardship Council—meet periodically to discuss statewide policy and priorities through a Sea-Level Rise Leadership Team they have formed. Besides the activities described in the figure, many state departments also are taking initial steps to assess how SLR will impact the state facilities and essential services for which they are responsible. Such steps were spurred by Governor Schwarzenegger’s Executive Order S-13-08 (which in 2008 directed state agencies to begin planning for SLR and climate impacts), and several iterations of the *Safeguarding California Plan* (which was compiled by the California Natural Resources Agency [CNRA] and serves as the roadmap for steps that state agencies and departments should take to respond to the changing climate). One department managing significant state assets that are at risk from SLR is the California Department of Transportation (Caltrans), which manages

state highways along the coast. Another is the Department of Water Resources, which manages the State Water Project, a water conveyance system that is highly dependent on the integrity of the levees in the Sacramento San Joaquin Delta to successfully move drinking water from the northern to the southern part of the state.

Additional Departments May Have More Involvement With SLR Adaptation in the Future. Two state departments not shown in Figure 4 that have had limited involvement with SLR activities thus far but may have increased roles in the future are the Strategic Growth Council (SGC) and California Office of Emergency Services (CalOES). Currently, SGC administers several state programs that are primarily designed to reduce greenhouse gas emissions, and its engagement on SLR-related issues has been relatively limited. As the state expands its focus beyond climate change *mitigation* into a greater emphasis on *adaptation*, however, the Legislature may choose to task SGC with additional responsibilities given the Council’s experience in managing climate-related programs. Additionally, CalOES directs disaster preparedness and response activities in California, including overseeing local disaster mitigation planning efforts and administering associated federal programs and funding. Correspondingly, as California communities increase preparation for and begin to experience the impacts of SLR, CalOES likely will play a role in supporting such efforts.

State Has Been Engaged in SLR Planning, Data Collection, and Information Dissemination.

The state has published a number of reports in recent years concerning SLR projections and steps the state and local governments might take to respond. Among these is the *State of California Sea-Level Rise Guidance Document*, which was initially adopted in 2010 and most recently updated in 2018. This document—developed by the Ocean Protection Council (OPC) in coordination with other partner agencies—provides (1) a synthesis of the best available science on SLR projections and rates for California, (2) a stepwise approach for state agencies and local governments to evaluate those projections and related hazard information in their decision-making, and (3) preferred coastal adaptation approaches. Other SLR-related plans and reports the state has released in recent years include several iterations of the aforementioned *Safeguarding California Plan* (each of which

consists of multiple companion reports), four *California Climate Change Assessment* reports (also encompassing multiple companion reports), the *California State Hazard Mitigation Plan*, and *Paying It Forward: The Path Toward Climate-Safe Infrastructure in California*.

Additionally, pursuant to Chapter 606 of 2015 (SB 246, Wieckowski), the Governor’s Office of Planning and Research (OPR) operates the Integrated Climate Adaptation and Resilience Program. This program is intended to develop a cohesive and coordinated response to the impacts of climate change across the state and has two components. First, a Technical Advisory Council helps OPR and the state improve and coordinate climate adaptation activities. Second, OPR has created a searchable online public database of adaptation and resilience resources—known as the State Adaptation Clearinghouse—including some related to SLR and coastal adaptation. The

Figure 4

State Departments With Major Sea-Level Rise (SLR) Related Responsibilities

Department	Primary SLR-Related Responsibilities
California Coastal Commission	Regulates the use of land and water in the coastal zone, excluding the San Francisco (SF) Bay Area. (The coastal zone generally extends 1,000 yards inland from the mean high tide line.) Reviews and approves Local Coastal Programs (LCPs)—plans that guide development in the coastal zone. Maintains permitting authority over proposed projects in areas in the coastal zone with no approved LCP and for state-managed lands such as state parks.
SF Bay Conservation and Development Commission	Reviews and issues regulatory permits for projects that would fill or extract materials from the SF Bay, and works to preserve public access along the bay’s shore. Participates in the SF Bay Area’s multiagency regional effort to address the impacts of SLR on shoreline communities and assets. Administers the Adapting to Rising Tides Program to support SLR-related planning and projects in the SF Bay Area.
Ocean Protection Council	Allocates grants for SLR and coastal adaptation projects and research. Conducts and distributes data and information to help local jurisdictions and state departments plan for SLR, including developing the <i>State of California Sea-Level Rise Guidance Document</i> .
State Coastal Conservancy	Allocates grants for and undertakes projects to preserve, protect, and restore the resources of the California coast and the SF Bay Area. Provides grants for planning and projects through its Climate Ready Program to increase the resilience of coastal communities and ecosystems to climate change impacts such as SLR.
State Lands Commission	Stewards sovereign state lands, including those located between the ordinary high water mark of tidal waters and the boundary between state and federal waters three miles offshore. Monitors sovereign state lands the Legislature has delegated to local municipalities to manage in trust for the people of California.
Governor’s Office of Planning and Research	Administers the Integrated Climate Adaptation and Resilience Program, which includes a web-based clearinghouse that compiles information about climate change adaptation research and projects, including those related to SLR.
Department of Parks and Recreation	Owns and manages more than one-quarter of California’s coastline. Responsible for protecting and conserving these beaches, wetlands, and other coastal resources on behalf of the public.

Clearinghouse includes resources such as local plans, educational materials, policy guidance, data, research, and case studies.

State departments have undertaken certain other initiatives to support SLR-related activities around the state, some of which are mentioned in Figure 4. For example, BCDC has developed the Adapting to Rising Tides Program which provides adaptation planning support, guidance, tools, and information to SF Bay Area agencies and organizations. BCDC has also developed detailed maps of how potential future flooding might impact the SF Bay region. The State Coastal Conservancy (SCC) has developed additional SLR resources and helps to coordinate the California Coastal Resilience Network, which presents monthly webinars on coastal adaptation. OPC has undertaken several initiatives, including a recently enacted contract to conduct a relatively small-scale public awareness campaign about the risks associated with SLR.

State Has Provided Limited Funding for Coastal Planning and Projects. In addition to undertaking state-level planning and research, the state has also provided some limited funding for SLR planning and projects. **Figure 5** summarizes the funding appropriated by the Legislature for coastal adaptation activities over the past five years (2014-15 through 2019-20), totaling \$67 million. These funds have been provided from a variety of sources. The Legislature has utilized bonds as the largest source of funding for these coastal adaptation activities (\$26 million), followed by the

Environmental License Plate Fund (\$17.5 million) and the Greenhouse Gas Reduction Fund (\$14.8 million). Much of this funding has been or will be used for grants to local governments and nongovernmental organizations for planning and projects, including through SCC’s Climate Ready Program. The totals shown in the figure include \$25 million for OPC and nearly \$4 million for SCC appropriated in the *2018-19 Budget Act* that can be used for coastal adaptation projects, some of which likely has not yet been allocated for specific projects. In addition, a portion of the funds have been used for state department staff to undertake activities that assist local governments, such as staff support from BCDC and the Coastal Commission for local planning efforts.

In addition to the funding specifically for coastal adaptation shown in Figure 5, some other state funds have supported related work in recent years. This includes a program run by the Division of Boating and Waterways within the Department of Parks and Recreation (State Parks) that allocates grants for local beach erosion control and sand replenishment projects. Some other funding has been provided through sub-grants from other state departments. For example, both BCDC and some local governments have received funding from Caltrans for coastal adaptation planning and projects that involve transportation infrastructure. Some of BCDC’s work supporting adaptation planning in the SF Bay Area has also been supported by some small grants from the Delta

Stewardship Council, and SCC has received grants from the California Department of Fish and Wildlife for wetlands restoration projects.

Federal-Level Efforts

Federal Government Has Supported Some Coastal Adaptation Activities in California. In general, the federal government’s role in preparing for SLR in California has largely been to support the state and local agencies by providing technical assistance, scientific research and information, and some limited

Figure 5
Summary of Recent State Funding for Coastal Adaptation
2014-15 Through 2019-20 (In Millions)

Department	Primary Uses	Amount
Ocean Protection Council	Grants for adaptation projects, statewide research projects.	\$34.6
State Coastal Conservancy	Grants for sea-level rise planning, grants for adaptation projects.	15.4
California Coastal Commission	Grants for local adaptation planning and to update Local Coastal Programs, staff support for those local planning efforts.	14.0
San Francisco Bay Conservation and Development Commission	Regulatory review of adaptation projects, grants for sea-level rise planning, staff support for regional planning efforts.	3.3
Total		\$67.3

funding. The primary federal agencies engaged in SLR-related activities in California are the National Oceanic and Atmospheric Administration (NOAA) and USGS. As discussed in the nearby box, FEMA has not had much involvement in coastal adaptation activities thus far, but likely will play a larger role in the future.

NOAA Provides Technical Assistance and Some Funding. NOAA works collaboratively with the state to implement the federal Coastal Zone Management Act and help protect coastal resources. Significant SLR-related initiatives that NOAA is undertaking in California include providing training on coastal adaptation planning, developing tools (including the “Sea Level Rise Viewer” that provides detailed digital maps of potential SLR flooding), and collaborating on data collection

initiatives. In addition, NOAA annually provides funding to the three state departments designated to help implement the Coastal Zone Management Act—the Coastal Commission, BCDC, and SCC. Between 2016 and 2019, NOAA allocated a total of about \$11 million to these three departments for their ongoing coastal management activities, of which about \$1.8 million was explicitly for SLR-related projects and policy development. NOAA has also provided some specific one-time grants to state departments and local governments for SLR-response initiatives in California, including \$690,000 to San Diego County for a coastal resiliency project described below.

USGS Provides Scientific Research and SLR Modeling. Unlike NOAA, USGS does not give out grants to the state or local agencies; rather,

Role of FEMA in Coastal Adaptation

FEMA Helps Communities Prepare for and Respond to Disasters. The Federal Emergency Management Agency (FEMA) works with the California Office of Emergency Services (CalOES) to help prepare for and recover from disasters. Therefore, like CalOES, FEMA likely will play a role in supporting the state’s coastal communities as they get ready for and respond to sea-level rise (SLR) impacts. Such efforts could include providing federal disaster mitigation funding for projects designed to reduce the future impacts of SLR. After a state experiences a federally declared disaster, FEMA provides it with funding to undertake activities intended to lessen the impacts of future disasters through the Hazard Mitigation Grant Program. For example, in 2018 (after experiencing several wildfire disasters) California received over \$500 million in disaster mitigation funding from FEMA. The state also received close to \$500 million in 2017, when federal disasters were declared after wildfires and severe storms.

FEMA Funds Could Be Used for Coastal Adaptation Projects. While the Legislature could help identify priorities for the use of such funds, thus far it has deferred to CalOES to select which areas of focus and specific projects to support—subject to approval from FEMA—when the state receives disaster mitigation funds. In general, CalOES has opted to use such funds to prevent future disasters of the type that recently occurred. For example, it plans to use essentially all of the 2018 funding on wildfire mitigation projects. However, this is not a FEMA-imposed requirement. While FEMA does have some requirements around how disaster mitigation funds must be used—including that funded projects meet its cost-benefit analysis parameters—it allows these funds to be used to help lessen the potential impacts of many types of disasters, not just those that a state recently experienced. As such, the state could use FEMA pre-disaster funds for coastal adaptation projects to mitigate future SLR-related flooding—even if FEMA provides the funds after the state experiences wildfire-related disasters. CalOES indicates it plans to use about \$50 million from the 2017 allocation of federal disaster mitigation funds for coastal projects. In general, however, this has not been a primary area of focus for such funds thus far.

USGS undertakes scientific research, which those agencies can then utilize. The largest SLR-related activity in which USGS is engaged in California is development of the Coastal Storm Modeling System (CoSMoS). This is a dynamic modeling approach that integrates predictions for (1) future SLR, (2) future coastal storms, and (3) long-term evolving coastal trends such as erosion to beaches and bluffs. Because it forecasts the potential interactions of these multiple events and impacts, this tool—which USGS has already completed for most of the state—allows for more detailed local predictions of future coastal flooding than models which only predict SLR. (The state has also contributed some funding to help develop CoSMoS.) In addition to developing CoSMoS, USGS is engaged in various other scientific research endeavors that relate to SLR, including monitoring coastal erosion and groundwater hazards, sea-floor mapping, and the Hazard Exposure Reporting and Analytics project that assesses the potential socioeconomic impacts of SLR within California’s coastal communities.

Local-Level Efforts

Local Governments Can Undertake Multiple Steps to Prepare for SLR. While the magnitude and timing of SLR still are unknown, many of California’s coastal communities have begun preparing for what level of risk they face and how they might respond over the coming decades. **Figure 6** highlights the key steps in this process. As shown, the first step for local governments typically is to conduct an assessment to ascertain how their residents, infrastructure, and services might be affected under different SLR scenarios. Next, they develop a high-level adaptation plan for how they might address those identified vulnerabilities. Subsequently, they begin to undertake the three stages of actually applying adaptation strategies to mitigate those risks—developing detailed plans, constructing projects, and undertaking ongoing monitoring and modifications to ensure effectiveness. While in many cases communities may undertake adaptation *projects*—such as building up sand dunes or restoring wetlands to serve as a wave buffer, or relocating infrastructure out of flood zones—they also may implement new

policies as part of their adaptation strategies. These could include imposing limits on (1) where and when hard armoring may be used (in order to prevent the erosion of beaches), (2) new development, or (3) rebuilding in certain coastal areas.

The process described in Figure 6 represents a deliberate, strategic approach to undertaking coastal adaptation. However, state law does not require that local governments progress sequentially through the steps described in the figure—nor, indeed, that they undertake each step at all. (As noted earlier, Coastal Commission staff does encourage local governments that are updating their Local Coastal Programs [LCPs] to undertake SLR vulnerability assessments.) Local governments could opt to skip the first several proactive planning steps of this process and instead implement response activities on a reactive basis once they begin to experience SLR impacts. As we discuss later, however, to the degree local communities avoid undertaking proactive risk assessment and planning activities in the near term, they may lose some opportunities for minimizing damage and disruptive SLR impacts in future years.

Many Coastal Communities Have Begun Preparing for SLR, but Only in Early Stages.

Data suggest that many communities around the state have begun to prepare for the effects of climate change. For example, OPR’s statewide *Annual Planning Survey* found in 2018 that 60 percent of responding cities and counties have plans or strategies to adapt to the impacts of climate change. (This survey did not ask about SLR specifically.) However, a closer look at the status of adaptation planning around the state suggests that even for those jurisdictions that are beginning to address the impacts of climate change, the majority of coastal jurisdictions still are only in the initial stages of the SLR preparation process displayed in Figure 6. Specifically, a recent statewide survey called the *2016 California Coastal Adaptation Needs Assessment Survey*—conducted as part of *California’s Fourth Climate Change Assessment*—asked coastal professionals about the current status of their adaptation work. Respondents included representatives from the local, state, and federal levels of government, as well as private

consultants and nongovernmental organizations. About one-third of respondents indicated they were primarily engaged in detecting and gathering information—such as by conducting vulnerability assessments. About half of respondents said they were developing adaptation and project plans—the second and third steps of the adaptation process shown in Figure 6. Only 16 percent indicated that they had transitioned to implementing and monitoring projects and policies. While these responses show slight progress compared to a similar survey conducted in 2011—in which a larger share reported they were still assessing their climate risks—the results show that few communities are yet ready to begin *implementing* SLR adaptation projects.

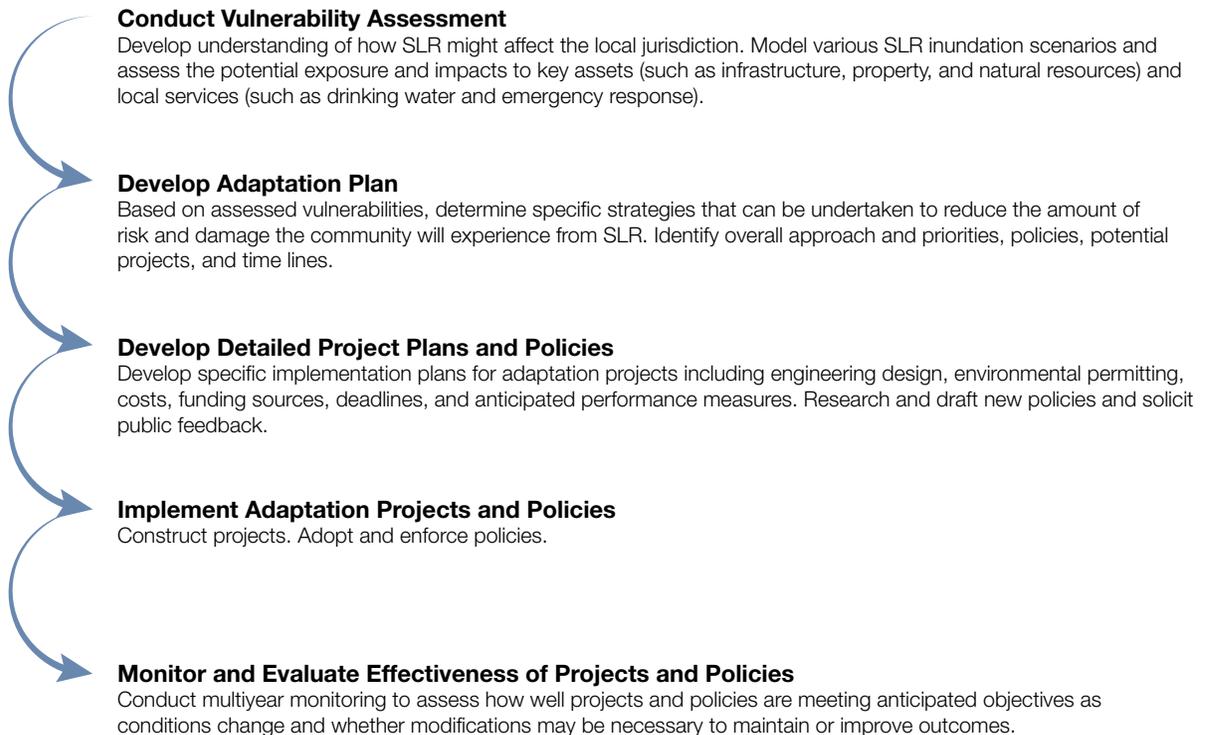
Moreover, the fact that most of the survey respondents indicated that they are engaged in *some* phase of adaptation work is not representative of the whole state, as highlighted

by the OPR survey data. That is, this survey's responses seemingly over-represented coastal professionals who are engaging in adaptation work and under-represented those communities that have not yet begun this type of work. That even within this skewed sample group so few respondents indicated they are implementing projects underlines how much preparation work remains to be undertaken statewide.

Several Types of SLR Planning Efforts Underway at Local Level. While some local governments are undertaking SLR vulnerability assessments and adaptation plans on their own initiative, such efforts are also prompted by three key statutory requirements. First, as described in the box on the next page, the 1976 California Coastal Act encouraged coastal communities to develop LCPs, which include policies to govern new and existing development along the coast and protect coastal resources in accordance with

Figure 6

Key Steps for Local Governments to Prepare for Sea-Level Rise (SLR)



LAO

State Has Special Jurisdiction Over Land Use Decisions in the Coastal Zone

Enacted in 1976, the California Coastal Act gives the state a unique role in planning and regulating the use of land and water along the coast. Specifically, within the coastal zone—unlike other areas of California—the state possesses the authority to regulate the construction of buildings, divisions of land, and activities that change the intensity of use of land or public access to coastal waters. (The land covered by the coastal zone is specifically delineated in statute and varies in width from several hundred feet in highly urbanized areas up to five miles in certain rural areas, and excludes the San Francisco Bay Area.) The basic goals of the Coastal Act are to balance development along the coast with protecting the environment and public access. The Act includes specific policies that address issues such as shoreline public access and recreation, habitat protection, landform alteration, industrial uses, water quality, transportation, development design, ports, and public works. The Coastal Act tasks the California Coastal Commission with implementing these laws and protecting coastal resources. As such, entities seeking to undertake development activities within the coastal zone must first attain a coastal development permit from the Coastal Commission. (In general, local governments make decisions about land use outside the coastal zone.)

The Coastal Commission may delegate some permitting authority to the 76 cities and counties along the coast if they develop plans—known as Local Coastal Programs (LCPs)—to guide development in the coastal zone. The LCPs specify the appropriate location, type, and scale of new or changed uses of land and water, as well as measures to implement land use policies (such as zoning ordinances). The Coastal Commission reviews and approves (“certifies”) these plans to ensure they protect coastal resources in ways that are consistent with the goals and policies of the Coastal Act. Local governments have incentives to complete certified LCPs, as they can then handle development decisions themselves (although stakeholders can appeal such decisions to the Coastal Commission). In contrast, any project undertaken in the coastal zone in communities without certified LCPs must attain a permit from the Coastal Commission. To date, nearly 90 percent of the applicable geographic area is covered by a certified LCP.

state law. Since most LCPs were developed around 30 years ago—before the need to account for the potential effects of climate change—some coastal communities are beginning to work on updates to address SLR. The Coastal Commission reports that 39 jurisdictions are in the process of updating their LCPs for SLR, including 30 that have completed vulnerability assessments. (Coastal Commission staff encourages using SLR vulnerability assessments to inform LCP updates.) Thus far, only three local governments have completed all stages of updating their LCPs for SLR and had them certified by the Coastal Commission. As shown earlier in Figure 5, state funding grants have partially supported these efforts. Specifically,

the Coastal Commission reports that between 2013 and September 2019, it provided 50 grants totaling nearly \$7 million to 37 local jurisdictions for SLR-related LCP updates.

Second, Chapter 608 of 2015 (SB 379, Jackson) requires communities to update the safety element of their General Plans to address the risks posed by climate change no later than 2022. Data suggest that local jurisdictions still are in the process of working to meet this requirement. Specifically, about 30 percent of the cities and counties that responded to OPR’s 2018 survey reported that they have addressed climate adaptation in their adopted General Plan policies.

Third, Chapter 592 of 2013 (AB 691, Muratsuchi) required certain coastal cities and special districts to conduct an assessment of how they propose to address SLR on the granted public trust coastal lands for which they are responsible. (These are sovereign state lands for which the Legislature has delegated management to local municipalities for specified uses, such as piers, ports, harbors, airports, and recreation.) For each applicable jurisdiction, these assessments must include: (1) an inventory of public trust assets that are vulnerable to SLR; (2) how SLR may impact those assets in the short, medium, and long term; (3) an evaluation of the financial costs associated with those SLR impacts—including for nonmarket asset values such as recreation and ecosystem services; and (4) a description of how potential SLR adaptation strategies could address the identified vulnerabilities and a proposed time frame for implementing such measures. The State Lands Commission is in the process of reviewing these reports, which had to be submitted by July 2019.

Some Examples of Regional Collaboration on SLR Planning Exist, but Efforts Are Limited.

Because the effects of SLR do not stop at the city border or county line, local jurisdictions would benefit from working together with their neighbors on a regional basis to collaborate on plans for addressing the interrelated impacts. While some regional collaborative efforts have been initiated across the state, these initiatives still are emerging and uneven. Perhaps the largest effort consists of seven regional groups that have formed in various areas of the state to work on climate change adaptation issues—including but not limited to SLR—as highlighted in **Figure 7**. The Local Government Commission and OPR help facilitate a network for these groups to communicate, known as the Alliance of Regional Collaboratives for Climate Adaptation (ARCCA). However, these regional groups have experienced varying levels of participation and activity. Most of the groups meet only intermittently

to informally share information, none has worked on developing a regional SLR or climate adaptation plan, and typically, they do not have permanent dedicated funding or staff. In some cases, local jurisdictions are only eligible to participate in their region's collaborative if they are willing and able to pay an annual administrative fee. As such, not all cities and counties located within the regions encompassed by these ARCCA groups are active participants that benefit from the potential collaboration. (Orange County is the only coastal county not encompassed by any of the ARCCA regional collaboratives.)

The SF Bay Area has made the most progress on multicounty regional SLR collaborative efforts. In a survey of SF Bay Area stakeholders conducted by University of California (UC), Davis, researchers in the fall of 2018, close to 60 percent of respondents reported that they had shared information about SLR with other organizations in the last year, and about 45 percent said that they had engaged in some joint SLR planning with other organizations. Moreover, in 2016, voters in the nine-county region passed Measure AA, establishing the SF Bay Restoration Authority and imposing a parcel tax that is projected to raise about \$25 million annually for 20 years to fund projects to protect and restore the bay. To support this effort, the Authority has established—and funded—the “SF Bay Restoration Regulatory Integration Team,” which is intended to expedite and simplify the permitting process

Figure 7

Groups Participating in the Alliance of Regional Collaboratives for Climate Adaptation

- ✓ Bay Area Climate Adaptation Network
- ✓ Capital Region Climate Readiness Collaborative
- ✓ Central Coast Climate Collaborative
- ✓ Los Angeles Regional Collaborative for Climate Action and Sustainability
- ✓ North Coast Resource Partnership
- ✓ San Diego Regional Climate Collaborative
- ✓ Sierra Climate Adaptation and Mitigation Partnership

for wetland restoration and flood management projects. Additionally, BCDC is initiating efforts to coordinate the development of a “Regional Adaptation Plan” for the SF Bay Area.

Other limited examples of regional collaboration related to SLR exist around the state at the county level. For example, some counties have conducted vulnerability assessments and adaptation planning specifically to address the threat of SLR across the jurisdictions within their counties. These include Marin and San Mateo. San Mateo County also just received statutory approval to reconstitute an existing special flood district to specifically address the anticipated impacts of SLR across the county. Additionally, San Diego County undertook a three-year initiative (funded by grants from NOAA

and SCC) called the “Resilient Coastlines Project of Greater San Diego” to coordinate several local SLR initiatives, gather scientific information on a regional basis, develop tools and resources, and connect community members and scientific experts to work together.

In an effort to help encourage regional climate adaptation efforts, the Legislature recently passed Chapter 377 of 2018 (SB 1072, Leyva). This legislation creates a program to assist under-resourced communities in developing the capacity to access grant funding for climate change mitigation and adaptation projects. SGC will administer the program, and still is in the process of determining its structure, selection criteria, and funding sources.

STRONG CASE EXISTS FOR LOCAL GOVERNMENTS TO ACCELERATE ADAPTATION ACTIVITIES

The relatively limited progress that local governments have made in preparing for SLR may not seem overly concerning, given that most of the intense impacts of SLR still are decades in the future. However, waiting too long to initiate adaptation efforts likely will make executing an effective response more difficult and costly. Taking action ahead of when sea levels are projected to

significantly encroach on the coast would enable local governments to benefit in several important ways, as summarized in **Figure 8** and discussed below.

Planning Ahead Means Adaptation Actions Can Be Strategic and Phased. Time allows cities and counties to (1) be strategic, phased, and

Figure 8

Benefits of Taking Action Early to Prepare for Sea-Level Rise (SLR)

- ✓ ***Planning Ahead Means Adaptation Actions Can Be Strategic and Phased.*** Early planning can allow coastal communities to adopt a phased approach that undertakes escalating actions when certain predetermined conditions or “triggers” are reached.
- ✓ ***Undertaking Near-Term Actions Can “Buy Time” Before More Intensive Responses Are Needed.*** Putting certain adaptation projects and strategies in place now can help postpone and extend the period before which subsequent, more difficult-to-implement actions are needed.
- ✓ ***Early Implementation Provides the Opportunity to Test Approaches and Learn What Works Best.*** Acting to implement adaptation strategies in the near term will provide the opportunity to monitor, evaluate, and revise them in the coming years before SLR threats become more pressing.
- ✓ ***Taking Action Earlier May Make Overall Adaptation Efforts More Affordable.*** Undertaking a multiyear, multistep strategic plan for coastal adaptation can allow local governments to spread costs over a longer period of time.
- ✓ ***Coming Decade Represents a Key Window for SLR Preparation.*** Some adaptation strategies—such as fortifying certain tidal marshes—may not be effective against SLR unless they are implemented before sea levels rise to higher levels.

thoughtful about which approaches will work best for their communities; (2) gather community input; and (3) implement projects and policies that may take many years to put into effect. Planning ahead can allow coastal communities to adopt a phased approach for when it will undertake escalating actions that is dependent upon when certain predetermined conditions or “triggers” are reached. For example, such a strategy might state that the community will relocate its wastewater treatment plant once sea levels are observed to have risen by 1 foot locally, and that in the meantime, stakeholders will identify a new location for the plant, develop detailed project plans, and acquire funding so they are ready to implement the project once the identified threshold has been reached. A phased approach based on defined triggers can also help address community concerns that a local government might be acting “prematurely” to address SLR and thereby affecting their property values unnecessarily. The *State of California Sea-Level Rise Guidance Document* encourages coastal communities to utilize “adaptation pathways” with multiyear, progressive steps—but such an approach requires time to develop and implement.

Undertaking Certain Near-Term Actions Can “Buy Time” Before More Intensive Responses Are Needed. Putting certain adaptation projects and strategies in place now can help postpone and extend the period before which subsequent, more difficult-to-implement actions are needed. For example, building up wetlands or sand dunes in certain areas could help buffer the effects of SLR and coastal storms and protect the development behind them for the coming few decades. Even if such a strategy would have decreasing effectiveness once sea levels rise to higher levels, implementing such a project in the near term could delay the date at which the buildings begin to regularly flood and need to be relocated or elevated.

Early Implementation Provides Opportunity to Test Approaches and Learn What Works Best. Near-term action allows for time to test theories and determine the most effective approaches. Because SLR poses a unique set of challenges, many uncertainties exist around which potential adaptation strategies might be most effective. For example, scientists are unsure of how successful wetland

restoration projects will be at buffering the force of waves during more severe coastal storms. Acting to implement adaptation strategies in the near term will provide the opportunity to monitor, evaluate, and revise them in the coming years. This can help the state and local governments ascertain which types of approaches will be best for particular locations and/or for widespread application as SLR threats become more pressing.

Taking Action Earlier May Make Overall Adaptation Efforts More Affordable. Undertaking a multiyear, multistep strategic plan for coastal adaptation can allow local governments to spread costs over a longer period of time and thereby make them more affordable. A multiyear financing approach—such as utilizing bonds—for large projects also provides the opportunity for costs to be borne by both current and future taxpayers, which is reasonable since such projects are intended to provide benefits over many years. Moreover, if local governments take the opportunity to test out SLR response approaches, they and other coastal communities can learn “best practices” from those pilot projects and likely will be able to replicate similar approaches in more efficient, cost-effective ways in the future.

Coming Decade Represents Key Window for SLR Preparation. Experts suggest the next ten or so years represent a crucial time period for taking action to prepare for SLR. After that point, sea levels may already have risen by around 1 foot in many locations, as shown earlier in Figure 1. Once sea levels have risen to higher levels, the planning window narrows and options for how local governments can respond become more limited. For example, a comprehensive scientific study of the SF Bay, *The Baylands and Climate Change*, suggests tidal marshes that are established by 2030 are more likely to flourish and provide wave-buffering benefits. After that point, marshes may not have sufficient time to develop and fortify—by building up sediment and growing plants—and will instead become submerged. Coastal communities that delay SLR response activities until coastal flooding is more imminent lose opportunities to implement proactive, incremental, and ground-tested adaptation responses. Instead, they will be forced into a more reactive mode with the need to address the threat immediately.

LOCAL ADAPTATION EFFORTS FACE KEY CHALLENGES

Despite the significant threats posed by the projected changes in the coming years and the compelling reasons to take action soon, most local governments still are only in the early stages of preparing for SLR, as discussed earlier. Data suggest that local governments' progress in adapting to the impacts of SLR is constrained by a number of key challenges. For example, **Figure 9** displays the top eight barriers that coastal professionals identified in the *2016 California Coastal Adaptation Needs Assessment Survey* as being "big hurdles" in their adaptation efforts. The academic literature on coastal adaptation and the many interviews we conducted in researching this report identified some additional common obstacles. **Figure 10** summarizes our compilation of key challenges, which we describe in more detail in this section.

Funding Constraints Hinder Both Planning and Projects

Local Governments Cite Funding Limitations as Primary Barrier to Making Progress on Coastal Adaptation Efforts. Funding for both coastal adaptation project implementation and planning are paramount concerns for local governments seeking to prepare for SLR. These funding challenges were identified in nearly all of the interviews we conducted in researching this report, and also are reflected as the first and third most cited hurdles, respectively, in the survey data displayed in **Figure 9**. A different statewide survey conducted in 2017 asked local government representatives specifically which adaptation-related activities they needed funding to conduct over the coming five years. (This survey did not ask about SLR or coastal adaptation

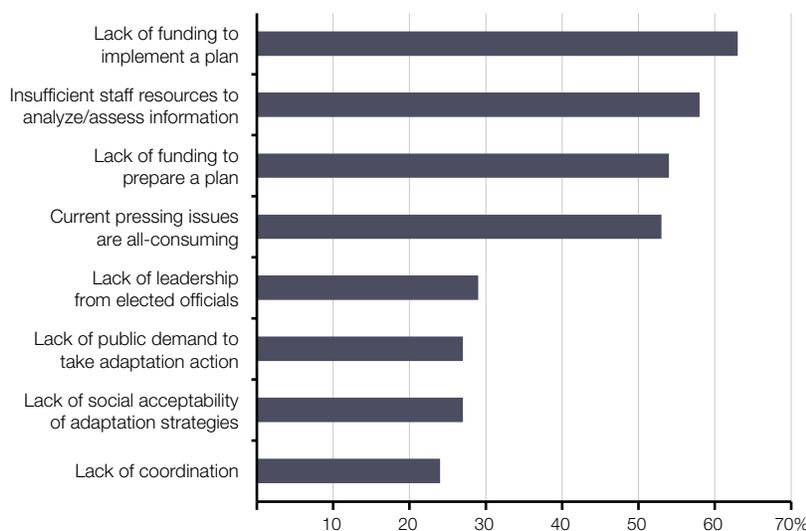
specifically.) The responses are displayed in **Figure 11** on page 22. As shown, comparatively lower—but still significant—proportions of respondents indicate the need for funding to conduct initial assessment and planning activities, with a much higher share needing funding to implement and evaluate projects. That survey also asked local governments whether they had yet acquired the necessary funds to undertake the identified adaptation activities—fewer than 2 percent responded affirmatively. About 32 percent of respondents indicated they had secured *some* funding, whereas about two-thirds responded they had secured *none* of the needed funding.

Responses from our interviewees and both of the above surveys appear to align with the trends cited earlier—that

Figure 9

Survey Results Highlight Significant Barriers to Coastal Adaptation

Percent of Coastal Professionals Indicating Barrier Is a Big Hurdle



From: S. Moser, J. Finzi Hart, A. Newton Mann, N. Sadrpour, P. Grifman (Susanne Moser Research & Consulting and U.S. Geological Survey), 2018. "Growing Effort, Growing Challenge: Findings From the 2016 California Coastal Adaptation Needs Assessment Survey." *California's Fourth Climate Change Assessment*.



many but not all communities have made headway in beginning to plan for climate change impacts (which is why comparatively fewer cite the need for planning funds), but few have moved into enacting those plans. Moreover, these data suggest that funding is a primary contributor to that lack of progress. The expressed need for funding likely is a result of constraints on available local funding as well as on funding from state, private, or federal sources.

Limited Local Funding Faces Many Competing Priorities. Even though responsibility for addressing SLR lies primarily with local governments, our interviews indicated that they struggle to identify local funding sources they can dedicate to preparation activities. This is echoed by the *2016 California Coastal Adaptation Needs Assessment Survey*, with respondents indicating that only about one-third of the funding currently supporting their adaptation activities comes from local sources. One chief explanation for these responses is that allocating funding

from existing sources to respond to a large, long-term, uncertain threat such as SLR is difficult when local governments have to balance such expenditures against many other immediate short-term priorities. Such priorities might include housing shortages, homelessness, schools, aging infrastructure, and other climate-related impacts such as increased wildfires. (Competing funding commitments likely also are factors for the 53 percent of survey respondents shown in Figure 9 who cite the challenge of facing many other pressing, all-consuming issues as a big hurdle in addressing SLR.) Additionally, California local governments' ability to generate new revenues for activities is constrained by certain constitutional limitations, including Proposition 13 (1978, which limits increases in local property taxes) and Proposition 218 (1996, which requires meeting a two-thirds local voter threshold in order to raise certain local taxes and fees). Moreover, local revenues available for adaptation activities may be further constrained in the future by SLR. This

Figure 10

Local Adaptation Efforts Face Key Challenges

- ✓ **Funding Constraints Hinder Both Planning and Projects.** Local governments cite funding limitations as their primary barrier to making progress on coastal adaptation efforts. This is largely because local funding faces many competing priorities and constraints, and only limited amounts of adaptation funding have been available from other sources.
- ✓ **Limited Local Government Capacity Restricts Their Ability to Take Action.** The novelty of the climate adaptation field makes it hard for local governments to locate and hire individuals with appropriate experience and expertise to plan for the impacts of sea-level rise (SLR). These capacity limitations are particularly challenging for small and disadvantaged communities.
- ✓ **Adaptation Activities Are Constrained by a Lack of Key Information.** Local governments cite a need for additional data and technical assistance to help inform their adaptation decisions, especially around the costs, trade-offs, and potential economic implications of SLR impacts. The novelty of coastal adaptation efforts means that this type of information is even more in demand—and limited.
- ✓ **Few Forums for Shared Planning and Decision-Making Impede Cross-Jurisdictional Collaboration.** Even though the interrelated effects of SLR make cross-jurisdictional planning essential, local governments lack forums and resources for discussing and planning for SLR on a regional basis.
- ✓ **Responding to SLR Is Not Yet a Priority for Many Local Residents or Elected Officials.** Because many California residents are not yet aware of how SLR might affect their communities or consider the threat as being far off in the future, coastal adaptation actions are not a high priority for them. This makes it difficult for local elected officials or government staff to champion unpopular SLR response actions.
- ✓ **Protracted Process for Attaining Project Permits Delays Adaptation Progress.** Achieving approval for coastal adaptation projects is complicated and takes a long time, in part because they represent a new challenge for the existing environmental regulatory system. This is particularly problematic because coastal communities face a pressing need to make progress on preparing for SLR before its impacts become more widespread.

is because existing property values in some areas of the coast likely will decrease if those buildings become or are at risk of becoming flooded, thereby over time affecting the property tax revenues generated for the local jurisdiction.

Only Limited Amounts of Adaptation Funding Have Been Available From Other Sources. Local government respondents to the 2016 California Coastal Adaptation Needs Assessment Survey indicated that while local sources have provided one-third of their coastal adaptation funding thus far, state funds provided the largest share—45 percent. As shown earlier in Figure 5, however, these funds have been relatively modest. Nevertheless, these findings highlight the important role that state resources have played in encouraging the coastal adaptation activities that have occurred to date. Responses to the aforementioned survey indicate that funding they have received for their adaptation activities from other sources are even more limited—10 percent

from foundations or other private sources and 9 percent from the federal government.

Limited Local Government Capacity Restricts Ability to Take Action

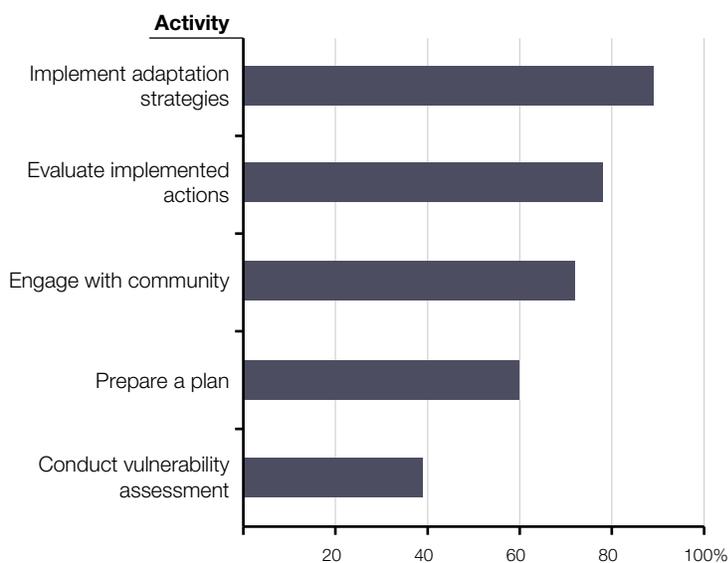
Local Governments Lack Sufficient Staff and Technical Expertise to Address SLR. Inadequate internal capacity to undertake adaptation planning and projects is also a significant barrier to local governments' SLR preparation efforts. We heard this frustration expressed repeatedly in our interviews, with local government staff indicating they need to address adaptation planning activities in addition to their primary job responsibilities. Additionally, local government interviewees indicated that staffing constraints often mean that they do not have the capacity to complete the work necessary to compile successful grant applications for the funding that the state offers for adaptation planning and projects—thereby compounding their challenges in making progress on coastal adaptation efforts.

In OPR's 2018 Annual Planning Survey, 60 percent of responding cities and counties indicated they had very little or no staffing and technical capacity to address climate change or adaptation. These findings are mirrored in the survey responses highlighted in Figure 9. Specifically, insufficient staff resources to analyze and assess information was the second most commonly cited hurdle to coastal adaptation efforts, cited by 58 percent of respondents. Interestingly, some progress to address these capacity issues appears to have been made in recent years, as a comparatively higher percentage of coastal professionals responding to the 2011 version of the same coastal needs assessment survey indicated insufficient staff resources as

Figure 11

Local Governments Express Need for Funding to Advance Adaptation Activities

Survey Respondents Indicating Need For Funding for Adaptation Activity in Next Five Years (2017)



From: S. Moser, J.A. Ekstrom, J. Kim, S. Heitsch (Susanne Moser Research & Consulting, Department of Water Resources, Local Government Commission and ICF), 2018. "Adaptation Finance Challenges: Characteristic Patterns Facing California Local Governments and Ways to Overcome Them." *California's Fourth Climate Change Assessment*. California Natural Resources Agency.



being a big hurdle—67 percent compared to 58 percent in the 2016 survey.

Adaptation Expertise Is Not Widespread. A couple of key factors may explain these capacity challenges. The first is a direct result of the funding constraints noted earlier—limited funds often translate to a limited ability to hire a sufficient cadre of qualified staff. Additionally, because climate adaptation is a new field, local governments find it hard to locate individuals with appropriate scientific, engineering, and legal experience and expertise to know how to plan for the impacts of SLR, even if they could manage to secure the funds to hire more staff. The *2016 California Coastal Adaptation Needs Assessment Survey* report states that “most coastal practitioners are still essentially learning about adaptation ‘on the job’ rather than through formal training opportunities.” Specifically, the survey found that only about 40 percent of local government respondents indicated that they had received any formal training in adaptation.

Small and Disadvantaged Communities Particularly Challenged by Capacity Limitations. Our research indicates the challenges associated with limited government capacity to address climate adaptation needs are especially pronounced for smaller communities and those whose residents have a lower average income and/or lower property values. These communities often have smaller government administrations and fewer financial, business, philanthropic, and community resources upon which to draw. As such, these communities likely find it even harder than their larger and better-resourced neighbors to hire and maintain experienced staff dedicated to adaptation work—which in turn also makes it even more challenging to compete for limited grant funding. This raises an important social equity concern about how adequate preparation for SLR may be influenced by the relative size and wealth of a particular community.

Adaptation Activities Constrained by Lack of Key Information

Local Governments Cite a Need for Additional Data to Help Inform Adaptation Decisions. In the interviews we conducted in preparing this report, one of the most frequently cited obstacles to

coastal adaptation was a lack of information to help guide decision-making. Specifically, local entities expressed uncertainty about how to proceed with SLR preparation because they are unsure about details such as:

- **Trade-Offs of Adaptation Options.** Data and examples that might help inform which adaptation options might be most appropriate for their community and what factors to consider when making those decisions.
- **Cost of Adaptation Options.** Rough estimates for how much different options might cost to implement and what factors influence those costs.
- **Economic Implications of Adaptation Options and SLR Impacts.** The potential economic impacts of implementing various adaptation options, including the “no action” alternative.
- **Locally Specific SLR Projections.** Specialized estimates and maps for how exactly SLR and coastal storms might affect specific locations, neighborhoods, infrastructure, and resources in their communities.
- **Legal Clarifications.** A legal analysis clarifying the responsibilities—and liabilities—local governments face with regard to SLR, particularly related to how potential changes in the mean high-tide line, land use policies, and city services might affect private properties.

The first four information priorities were also cited by city and county respondents to the *2016 California Coastal Adaptation Needs Assessment Survey* when asked which types of information they perceive as most useful for assessing the risks from climate change to local coastal resources. Specifically, about 75 percent rated information on the trade-offs of adaptation as very useful, and a similar percentage said the same about information on the costs of adaptation (representing the top two responses to the question). The usefulness of economic and community vulnerability assessments each were rated as very useful by about 60 percent of respondents. (The survey did not ask about legal information.)

The lack of information on the potential economic impacts that SLR might have on the community was raised repeatedly throughout the interviews we conducted for this report. Even for the local governments that have conducted initial SLR planning activities, few vulnerability assessments include these types of considerations. Similarly, only a handful of completed adaptation plans across the state include an analysis of the economic trade-offs of employing potential adaptation strategies. For example, this could include evaluating and comparing the short- and long-term costs and benefits of approaches like building seawalls, adding sand to beaches, restoring wetlands, and relocating infrastructure. Feedback from our interviewees suggests they have not undertaken these types of analyses because they are complicated and expensive to conduct, with few examples available to serve as models. Yet without an understanding of the economic implications associated with SLR or the costs and benefits of the steps they could take to address those impacts, local governments are constrained in determining the best path forward.

Novelty of Coastal Adaptation Efforts Means Information Is Even More in Demand—and Limited. Interviewees who were able to gather the necessary information to complete vulnerability assessments and high-level adaptation plans indicated that they were unclear how to determine what specifically they should do next. That the coastal adaptation field is so new is a large contributor to this information gap. These uncharted waters present a double challenge—local governments have never undertaken such work before and therefore are urgently in need of guidance, examples, and data to help them make these novel decisions. However, such information is not widely available because few others have undertaken such work either.

Technical Assistance Not Widely Available. Interviewees cited a lack of—and desire for—entities to which they might be able to turn for advice, technical assistance, comparison data, and real-world examples to help inform their adaptation decisions. As noted earlier, OPR created the Adaptation Clearinghouse, which provides an online database of resources for adaptation

planning and projects. Our interviews and available research, however, suggest use of this website is not yet widespread. This is due both to a lack of awareness about the resource, and also because users find it overwhelming and difficult to navigate. Rather, local entities express a desire for (1) models and planning templates they can recreate or modify to meet their local circumstances, and (2) experts they can call upon to discuss and help address their specific needs. The Clearinghouse has only limited examples that meet the first need and does not have staff available to address the second. Some entities have provided technical assistance for coastal adaptation efforts within their regions—such as the Adapting to Rising Tides Program administered by BCDC in the SF Bay Area and the University of Southern California Sea Grant program in Los Angeles—but these resources are not available statewide.

Few Forums for Shared Planning and Decision-Making Impede Cross-Jurisdictional Collaboration

Local Governments Lack Robust Forums for Discussing and Planning for SLR on a Regional Basis. Local governments across California lack formal and strategic ways to learn from each other, share information, or make decisions together about coastal adaptation issues. As noted earlier, while some regional collaborative efforts are underway across the state, such initiatives are largely informal, they lack funding and staff, and their level of activity and participation vary by region. Moreover, with the exception of a couple of countywide plans, no region has yet developed a coordinated plan for how it will address SLR impacts on a regional basis. This lack of coordination was frequently mentioned as a significant concern by the individuals we interviewed, and was highlighted as a big hurdle by about one-quarter of survey respondents in Figure 9. When UC Davis researchers surveyed stakeholders in the SF Bay Area about the largest barriers they face in working collaboratively with other stakeholders on SLR issues, the most common response was the lack of an overarching regional plan to address SLR.

Cross-Jurisdictional Planning Is Challenging.

Distinctions across local governments—including bureaucratic and administrative differences, as well as varying interests and priorities—always make cross-jurisdictional planning and coordination difficult. Interviewees indicated that addressing the needs of their own jurisdictions already presents a challenge, and the prospect of incorporating those of their neighbors into their planning efforts feels like an overwhelming task. Moreover, they expressed concerns that regional planning efforts might prioritize the requests of other jurisdictions over their own—especially if their city is small or wields comparatively less political influence—and also that finding common ground around adaptation actions could be difficult. Finally, interviewees stated that regional collaboration would require additional staff time—particularly to organize and attend forums for such discussions to take place—and their resources already face constraints.

Interrelated Effects of SLR Make

Cross-Jurisdictional Planning Essential. Given these complications, the lack of collaborative efforts around SLR is not surprising. However, the widespread impacts of SLR make coordinated regional planning fundamental to effective preparation—and the lack of such efforts is therefore particularly concerning. Local jurisdictions planning on their own will not be able to address the SLR impacts that might have substantial impacts on their own community but are dependent upon their neighbors taking action. For example, residents of one city may be precluded from getting to and from their homes or work or from accessing emergency services if a key transportation thoroughfare floods in a neighboring city. Moreover, SLR response actions taken by one jurisdiction could have significant effects on their neighboring cities. For example, if one city decides to construct hard armoring structures—such as seawalls—to protect structures along much of its coastline, the ensuing erosion processes could remove most of the sand from the beaches in a neighboring city. These interconnected SLR impacts increase the importance of coordination, shared input, and joint planning. Even multi-jurisdictional planning efforts might be insufficient to adequately address future SLR impacts if they fail to include key landowners

and stakeholders—such as utilities, railroads, Caltrans, State Parks, refineries, and ports—who will be necessary participants in making future land use decisions for the region.

Responding to SLR Is Not Yet a Priority for Many Local Residents or Elected Officials

Many California Residents Do Not See Need for Immediate Action to Address SLR.

Two of the barriers cited in the survey data shown in Figure 9 relate to public perceptions about the risk of SLR—the lack of public demand to take adaptation action and the lack of social acceptability of adaptation strategies. These dynamics were echoed in many of the interviews we conducted in preparing this report, and have been on display in some high-profile community mobilization efforts against proposed SLR adaptation actions in certain coastal communities in recent months.

Much of the public lack of engagement about or resistance to coastal adaptation efforts seems to stem from two key factors. First, many California residents are generally unaware of projections about how SLR might impact them. Few communities have undertaken public awareness campaigns about SLR or broadly disseminated maps of areas that are projected to flood in the coming years. Moreover, potential SLR coastal flooding is not currently required to be disclosed during real estate transactions—in contrast with the risks associated with forest fires, earthquakes, or floods. (Existing flood risk notifications are based on historical flood events and therefore do not take potential SLR impacts into account.) California law requires that these potential hazards be disclosed to prospective property buyers. Because residents may not know about SLR predictions or see many obvious SLR-related impacts happening now, coastal adaptation actions likely are not a high priority for them to request from their local governments—especially compared to more current pressing concerns. Second, even many coastal residents who have some awareness that sea levels are projected to rise likely view the threat of SLR as being far off in the future. They therefore feel that for their local governments to take SLR

response actions that might affect their property values or lifestyle in the near future is premature and inappropriate—even if those actions are only planning for what future adaptation responses *might* be. For example, several coastal communities that drafted adaptation plans mentioning the possibility of relocating infrastructure in the future before it becomes flooded (sometimes referred to as “managed retreat”) have faced vociferous public backlash—largely because of residents’ concerns that such changes might impact their own properties now or in the future.

Local Elected Officials Currently Face Disincentives to Champion Unpopular SLR Response Actions. Resistance against taking aggressive action on SLR now is also demonstrated in the attitudes and actions of many local government leaders. As shown in Figure 9, 29 percent of the survey respondents identify the lack of leadership from elected officials as a big hurdle to making progress on coastal adaptation activities. This dearth of enthusiasm about adaptation may be somewhat predictable, as local officials typically try to reflect the priorities of their constituents. Additionally, the most intense impacts of SLR likely will not manifest for at least a decade—and perhaps multiple decades—into the future. Many current public officials may be disinclined to face the backlash and potential political consequences from enacting unpopular policies now when the evidence for and benefits of taking those actions may not be experienced until long after they are out of office. A lack of public support also makes it difficult for local governing entities to advance proposals for raising additional revenues—such as through new fees or taxes—to undertake adaptation projects now. Moreover, local officials may be reluctant to undertake any adaptation actions or policies that would limit future development or reduce existing property values in fear of restricting or reducing the local revenues on which they currently rely to provide government services.

Despite these disincentives, reluctance to champion coastal adaptation efforts is not a universal position across California’s cities and counties. Rather, as noted earlier, many California cities and counties are making some progress on

SLR preparation activities, and examples exist of local elected officials around the state taking a leadership role in such efforts.

Protracted Process for Attaining Project Permits Delays Adaptation Progress

Several coastal professionals with whom we spoke in preparing this report reported that the lengthy process for attaining approvals from state and federal agencies to implement adaptation projects is a significant barrier to getting more projects underway.

Achieving Approval for Coastal Adaptation Projects Is Complicated and Takes a Long Time.

As with any development project along the coast or SF Bay, adaptation projects must go through a review and approval process and attain permits from numerous state and federal agencies to ensure they are not causing undue harm to the environment. Although such projects often differ from traditional construction and infrastructure projects in that they may be nature-based (such as sand dune or wetland restoration projects), they are not exempt from the standard environmental review process. Agencies that typically must grant regulatory approvals for coastal adaptation projects include the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, NOAA National Marine Fisheries Service, the Regional Water Quality Control Board, the California Department of Fish and Wildlife, the Coastal Commission (for projects in the coastal zone), and BCDC (for projects along the SF Bay). These agencies review potential projects to ascertain how they might affect fish and wildlife and their habitats, water quality, and public access to the shoreline.

In general, project proponents must submit separate permit applications (and associated fees) to each of the applicable agencies, each of which then undertakes its own independent review on its own time line. In addition, each regulatory reviewer typically imposes its own permit requirements, such as requiring activities to help mitigate any anticipated environmental impacts. Because these reviews are conducted independently from each other, in some cases one agency may impose

permit conditions that can duplicate or even contradict those required by a different agency. For example, while federal and state fish and wildlife agencies work to minimize project impacts on at-risk species, BCDC seeks to maximize public access to the bay shore. These goals can be in direct conflict, as imposing permit requirements to add public access infrastructure and increase human visitors can negatively impact wildlife. In such cases, the project proponents must negotiate between the agencies to develop a set of project requirements that they are capable of implementing. Due to the delays associated with these myriad reviews and ensuing requirements, SCC estimates that attaining permits for a typical adaptation project can take at least one year from when such applications are submitted. As discussed below, this protracted time line is particularly problematic for coastal adaptation efforts given the relatively narrow window for implementing certain types of projects.

SLR and Coastal Adaptation Projects Represent New Challenge for Existing Environmental Regulatory System. In general, the existing set of regulatory requirements for coastal projects was established several decades ago to protect against environmental damage that might be caused by development along the coast or SF Bay. Most of these requirements were developed long before SLR became a concern, and as such did not contemplate the types of adaptation projects currently being proposed or the coming challenges such projects are intended to address. For example, BCDC has long had policies against allowing sediment to be dumped or added within tidal waters to avoid filling in the SF Bay, which was a significant concern in the 1960s that led to BCDC's creation and underlying statutory authority. However, many bay shore adaptation projects require the addition of sediment to build up existing tidal marshes and wetlands to enable them (and the wildlife that live there) to withstand higher water levels and waves. This disconnect has led to problems and delays with attaining BCDC's approval for proposed wetland restoration projects in recent years. (As noted later, BCDC recently modified its Bay Fill policy to address this concern.)

Similarly, to protect coastal resources the Coastal Commission has a rigorous process for evaluating and permitting coastal development—such as hotels, houses, parking lots, or water treatment plants—that has historically posed a *risk* to such resources. The Coastal Commission's regulatory review structure has not typically been faced with how to evaluate natural infrastructure projects that are intended to make the coastline more resilient and that can *benefit* the environment—such as “living shoreline” projects that add sand and plants to the shore to buffer wave action and enhance coastal habitats. (Certain other types of adaptation projects, such as relocating a road or infrastructure inland, however, may more closely resemble traditional development projects.) Because existing regulatory review policies were not developed to evaluate these new types of projects, they can face increased scrutiny, requirements, and delays compared to more traditional and familiar projects (such as adding piles of rocks to the shore to armor the coast ahead of a storm). The increased rigor, complication, and time for these reviews can in turn create disincentives for coastal communities to attempt innovative or nature-based approaches.

Permitting Approach Is Particularly Problematic for Climate Adaptation Projects. Complaints that the environmental permitting system is complicated and protracted are not unique to coastal adaptation projects. Such criticism has often been raised by proponents of many types of projects, including for traditional types of construction and development as well as nature-based projects such as those that restore streams or remove dead trees and dense underbrush from forests. However, such issues raise particular concerns for coastal adaptation projects for two key reasons. First, coastal communities face a pressing need to make progress on preparing for SLR before its impacts become more widespread, and this need will become increasingly urgent in the coming years as sea levels continue to rise. As discussed earlier, the next decade represents a crucial time period for implementing certain types of projects—such as enhancing coastal marshes—before rising water levels preclude their effectiveness. As such, coastal

communities cannot afford to wait at least a year to attain approvals for each project—nor, collectively, can the state, if it wants to improve SLR preparedness levels across California. Second, the state should be encouraging a wide complement of potential approaches to address SLR, including innovative natural infrastructure projects that provide environmental benefits. As discussed, the current regulatory review regime may be having the opposite effect.

While some limited examples of efforts to address these issues exist, they do not apply to coastal adaptation projects statewide. For

example, as noted earlier, the SF Bay Area has created the regional SF Bay Restoration Regulatory Integration Team to expedite and simplify the permitting process for certain projects. This team is coordinating permit review and requirements across all the applicable state and federal agencies, however only for SF Bay Area wetland projects funded with local Measure AA funds. Additionally, CNRA has formed a work group to look into ways to coordinate and expedite regulatory review processes, but thus far that effort is limited to permits for forest health projects and does not apply to coastal adaptation.

STATE CAN HELP EXPEDITE LOCAL SLR ADAPTATION EFFORTS

As discussed earlier, the state has a strong interest in helping to ensure that local governments take sufficient actions to mitigate the potential economic, environmental, and public health risks associated with SLR. Moreover, given that delaying adaptation work can result in missed opportunities and higher costs, a strong case exists for the state to help remove barriers at the local level in order to expedite such work.

State Can Play Key Role in Supporting Local Adaptation Efforts. Coastal communities must increase both the extent and pace of SLR preparation efforts if California is to avoid severe, costly, disruptive, and harmful impacts in the coming decades. The state has neither the capacity nor the authority to assume primary responsibility for planning, developing policies, or implementing response activities across California's many coastal communities. Furthermore, local governments are most attuned to the particular needs and circumstances facing their communities. However, this does not mean the state should avoid *any* involvement in coastal adaptation activities—the statewide risks and potential impacts of inadequate preparation are too great. The state can play an important role in encouraging and supporting local efforts and helping to alleviate some of the challenges local governments face. For example, the state can use its over-arching position to help

facilitate coordination across jurisdictions and take advantage of economies of scale by collecting and disseminating helpful information statewide. The state can also take action to ensure public trust resources like beaches, wetlands, and coastal access are preserved. Additionally, the state can help ensure that local adaptation efforts adequately address the needs of vulnerable communities that might not have the political or financial resources to guarantee they receive sufficient preparation and protection.

State Cannot Bear Majority of Costs of SLR Preparation . . . The state does not have the fiscal resources to fund most of the coastal adaptation activities that ultimately will be needed to prepare for SLR. Nor would expecting statewide taxpayers to fully subsidize such activities be appropriate, given that most coastal properties and infrastructure are owned by and primarily benefit local governments or private entities. Local governments have the primary responsibility for planning, authorizing, maintaining, and operating their local infrastructure, and they—and their residents—correspondingly should pay the costs associated with those activities, including how their infrastructure may need to be modified for SLR. As is the case with most local infrastructure costs—including construction and maintenance of water and sewer systems, roads and transportation

systems, and school facilities—the bulk of funding for climate adaptation activities will need to come from local sources.

... However, State Investments Can Help Spur Other Actions. Because of the state interest in ensuring that coastal communities are adequately prepared, however, the state has made and will want to continue making some contributions to assist local governments in their SLR adaptation efforts. State dollars can serve as “seed money” that help to spur adaptation project planning efforts for which local governments cannot generate sufficient impetus or funding to get started on their own. Local governments report they often find obtaining local funding sources—such as new dedicated taxes, bonds, or loans—easier when they are requesting the monies to construct specific projects, in contrast to planning activities. As such,

state funds play a particularly important role in helping support these initial stages of adaptation work. State funds can also be a key factor enabling the construction of adaptation projects, pairing with local funds to help partially offset what still will be significant upfront costs for local governments. This is consistent with the role the state has played as a contributing funder for many other types of local infrastructure projects. For example, the state frequently funds portions of local water supply and transportation projects, and contributes to the construction of local public school buildings. State funds could be especially important for large regional adaptation projects (which are more difficult and complicated to implement) and projects in economically disadvantaged communities (which often face additional challenges in generating local funding).

RECOMMENDATIONS FOR LEGISLATIVE STEPS

LAO Recommendations Intended to Help Address Key Local Barriers, Help Expedite Adaptation Progress. While effectively preparing for and responding to SLR will be a difficult task for local governments, the threat is on its way. Consequently, the challenges local jurisdictions face will become significantly greater if they do not make additional progress in the coming years. We believe the Legislature can play an important role in helping to increase the types, pace, and scale of coastal adaptation efforts around the state. In this section, we make several recommendations for how the Legislature can help alleviate some of the key barriers to coastal adaptation that local governments are experiencing. **Figure 12** summarizes our recommendations, which we discuss in more detail below.

Figure 12

Summary of LAO Recommendations to Support and Enhance Coastal Adaptation Efforts

- ✓ **Foster Regional-Scale Adaptation**
 - Establish and assist regional climate adaptation collaborative groups.
 - Encourage development of regional coastal adaptation plans.
 - Support implementation of regional adaptation efforts.
- ✓ **Support Local Planning and Adaptation Projects**
 - Increase assistance for cities and counties to plan for sea-level rise (SLR).
 - Support coastal adaptation projects with widespread benefits.
 - Facilitate monitoring of state-funded demonstration projects.
- ✓ **Provide Information, Assistance, and Support**
 - Establish the California Climate Adaptation Center and Regional Support Network.
 - Develop a standard methodology for economic analyses of SLR risks and responses.
 - Require a review of how regulatory permitting processes can be made more efficient.
- ✓ **Enhance Public Awareness of SLR Risks and Impacts**
 - Require coastal flooding disclosures for real estate transactions.
 - Require that state-funded adaptation plans and projects include robust public engagement.
 - Direct state departments to conduct public awareness campaign about threats posed by SLR.

Foster Regional-Scale Adaptation

More widespread collaboration and planning for the inter-jurisdictional effects of SLR not only will help contribute to greater statewide coastal preparedness, it can also help address coastal communities' challenges with limited funding, information, and capacity. We have three recommendations for how the Legislature can foster adaptation efforts at the regional scale.

Establish and Assist Regional Climate Adaptation Collaborative Groups. We recommend the Legislature support climate adaptation work at a regional scale. Specifically, we recommend establishing collaborative groups in several regions across the state to plan together and learn from each other regarding how to respond to the effects of climate change. These groups can help build on some of the nascent collaborative efforts on climate adaptation that are already underway in some regions but help make them more consistent, sustainable, and available across all areas of the state.

By sharing information and resources, such groups have the potential to address many of the adaptation barriers identified by coastal professionals. They can help with coordinating how to respond to cross-jurisdictional climate impacts, creating efficiencies and economies of scale, and building capacity through shared learning and pooling of resources. Participants should primarily include representatives from local governments, but the groups should also create a forum for them to liaison with other key planning partners such as community-based organizations, state agencies, and utilities.

While collaboration will be particularly helpful for SLR preparation because of the cross-jurisdictional effects of coastal flooding, we believe limiting the scope of these groups solely to coastal regions and issues would be a missed opportunity. Local governments must confront and plan to address multiple climate-related challenges, including an increased risk of wildfires, droughts, and incidents of extreme heat. Working with and learning from regional neighbors will be not only helpful but essential in all of these interrelated efforts.

In implementing this recommendation, the Legislature will want to carefully consider how to define and delineate regions, how many regions to fund, and which entities should serve as the fiscal and administrative agents for the groups. These collaborative groups should be large enough to encompass impacts that will affect the whole region and take advantage of economies of scale, but not so large that they inevitably overlook important issues, concerns, and constituents specific to the region. Moreover, they should consider natural processes that will impact participants similarly (such as tidal impacts and sand migration patterns) around which regional planning makes particular sense. Based on existing regional models and feedback we solicited in researching this report, we think the state should look to fund around 10 or 12 collaborative groups. Because of its experience administering climate mitigation programs and its current work establishing a regional program pursuant to SB 1072 (as mentioned on page 18), we recommend the Legislature direct SGC to administer this program, including developing criteria for selecting regions and regional leads, soliciting applications, and choosing the collaborative leads for each region. The seven existing ARCCA groups highlighted in Figure 7 on page 17 may be appropriate entities to lead this effort in some regions because of their previous work and relationships, but this may not be the case in all areas of the state. Moreover, not all counties are covered by the existing ARCCA groups.

In order to sustain the regional groups on an ongoing basis, we recommend providing them with an annual appropriation. The amount of state funding to provide to each region should be sufficient to support a couple staff members, administrative costs, and regular opportunities to plan and share information together (such as meetings and conferences)—perhaps around \$500,000 per region annually. The overall cost to the state will depend upon how many regions the Legislature chooses to fund. This level of consistent base funding should make certain the groups can be sustained, however it will not be sufficient to fund all of their activities. To ensure local buy-in and accountability that the groups' work remains helpful

and relevant to them, collaborative participants should also be expected to contribute to the groups' costs and operations. These contributions could include in-kind staff time and involvement as well as a physical location to house the staff and group's operations.

Encourage Development of Regional Coastal Adaptation Plans. In addition to establishing and sustaining forums for regional collaboration around climate issues, we also recommend the Legislature support those groups in developing coastal adaptation plans. These plans should address key vulnerabilities and risks that SLR poses to the region, as well as adaptation strategies the region will take to address them. We envision such a regional plan as distinct from planning efforts occurring at the individual city and county levels in that it would focus on more broad, interconnected, cross-jurisdictional issues that would be outside the scope of single-jurisdiction plans and projects. Additionally, we view these plans as an opportunity to incentivize the region to work together to help address the needs of under-resourced communities that might not be able to adequately prepare if left to plan their own, as well as public trust resources which benefit all local constituents. The plans should not be simply a collection of unrelated vulnerabilities and projects compiled by the region but rather should be focused on issues that have cross-jurisdictional importance. To ensure this emphasis, we recommend the Legislature require that these plans be focused on three categories of regional issues:

- **Interrelated natural effects** such as erosion and sand migration patterns, as well as wetlands that buffer wave action.
- **Interrelated human impacts** such as addressing potential flooding in important transportation corridors and for important infrastructure that affect multiple jurisdictions.
- **Key regional priorities** such as addressing the needs of vulnerable communities, preserving public access to the shoreline, and protecting natural resources such as beaches and coastal habitats.

Because these regional coastal adaptation plans would be coordinated and developed by the

regional collaborative groups described above, we similarly recommend the Legislature task SGC with their administration. We recommend the Legislature direct SGC to develop criteria for what the plans should include (pursuant to priorities specified in legislation), what types of entities should be included in the development process, as well as a process for reviewing and approving the plans once they have been developed to ensure they meet the required elements. We recommend the Legislature appropriate funding for grants that SGC would allocate to the regional collaborative groups to support the development of these plans. The state has provided funding for regional plans in other sectors that can serve as models for these coastal adaptation plans. These include regional transportation plans, integrated regional water management plans, and sustainable communities strategies. Based on these examples, we estimate that a few million dollars per region is a reasonable amount to provide for plan development. Assuming the state establishes between six and eight collaborative groups that encompass the coast, adopting this recommendation would have an overall one-time cost of \$15 million to \$30 million. This amount likely would not be sufficient to cover all costs for these planning efforts, but we believe expecting that local governments contribute a share of the costs is reasonable.

While the state's regions face a number of climate-related challenges for which they have to prepare, we recommend focusing state support for this initial planning effort on coastal adaptation. Because of its cross-jurisdictional impacts and imminence, we think SLR is a fitting issue for the state to select for a pilot regional adaptation planning initiative. As such, only the regional collaborative groups containing coastal counties would be eligible for this proposed planning grant. Limiting the exercise in this way can help participating cities and counties undertake and accomplish the work more quickly compared to if they had to also address potential regional impacts from wildfires, droughts, and heat. (The state should not prohibit regional collaborative groups from widening the scope of their adaptation plans should they wish to do so, but should only provide funding for a targeted coastal focus.) If this regional

planning exercise proves to be productive and effective, the Legislature could consider funding similar efforts to address other climate threats in the future.

In areas where planning efforts already are underway, regional coastal adaptation plans can build upon and connect work that has already been undertaken by individual cities and counties, help fill in gaps, and focus the emphasis on issues of regional importance. In other areas of the state where fewer planning efforts have yet been undertaken, more initial research and planning will be needed. Additionally, an overall regional plan could encompass sub-regional plans and projects based on what makes the most sense for the region. For example, the adaptation plan for the SF Bay Area may be divided into a set of interrelated strategies for the North Bay that differ from those developed for the East Bay.

Consistent with many other local planning efforts—including LCPs—we do not propose making the development of regional coastal adaptation plans a required state mandate. Even if the Legislature were to make these planning efforts optional, we believe most jurisdictions and regions would participate. This is because coastal communities already have a rationale to seek to avoid the potential damages and disruption from SLR; the state providing a forum, structure, and funding to undertake regional planning can help remove barriers and facilitate those communities taking essential steps to meet those objectives. Additionally, implementing our recommendation to provide future project funding that is contingent upon the development of these plans—as discussed next—would provide incentives for cities and counties to participate in these regional efforts.

Support Implementation of Regional Adaptation Efforts. Once they have developed coastal adaptation plans, we recommend the Legislature provide some funding to help regions begin implementing the projects identified in those plans. Because of its experience in allocating grants for coastal projects, we recommend the Legislature task SCC with administering this program. As noted earlier, the need for funding to undertake projects is a primary barrier for coastal communities seeking to prepare for SLR. The state

making a commitment to help assist in the funding of projects—even if it might be appropriated across multiple years—will help incentivize participants to spend time on collaborative planning. State contributions for implementing larger-scale, multiyear coastal adaptation projects will be particularly important because such projects likely will be more logistically complicated and expensive to undertake if multiple jurisdictions are involved. As discussed earlier, we recommend the state require that local governments also acquire funding contributions from other sources for these projects.

Estimating an appropriate range of funding for the state to provide for coastal adaptation projects is difficult until regional plans and priorities are developed and submitted. However, stakeholders whom we interviewed for this report emphasized that having some certainty that project implementation funding will be available and forthcoming from the state will be a critical factor for ensuring robust participation by local governments in the planning process. Given the magnitude of the threats posed by SLR, regional projects could easily cost billions of dollars. Because local governments likely will not be ready to spend these funds for a few years—until after they complete regional plans and initial project design work—the Legislature could select an initial target amount to plan to set aside now and revisit that amount as plans and project proposals are developed, particularly in the context of its other spending priorities. For example, if the Legislature is considering asking voters to approve a new general obligation bond for climate adaptation in the coming years, it could reserve a portion of these funds for regional coastal adaptation projects.

Support Local Planning and Adaptation Projects

Not all SLR preparation efforts are appropriate to undertake at the regional scale. Individual cities and counties also will need to address anticipated impacts within their own jurisdictions that do not have a regional impact. Moreover, communities around the state share the need to learn more about which types of coastal adaptation strategies

are most effective. We have three recommendations to help achieve these objectives.

Increase Assistance for Cities and Counties to Plan for SLR. While some SLR impacts would be covered by our proposed regional planning effort, this would not preclude the need for cities and counties to plan for how they will address their more localized vulnerabilities. We recommend the Legislature provide additional support for individual jurisdictions to continue to plan for the effects of SLR. Specifically, we recommend the Legislature appropriate funding to SCC for a grant program that would offset a portion of local governments' costs for conducting vulnerability assessments, adaptation plans, and detailed plans for specific projects. This would continue previous efforts funded through SCC's Climate Ready Program. The funding would help communities that have not yet completed the initial steps of the SLR planning process. Moreover, even cities and counties that have completed vulnerability assessments and adaptation plans report a need for financial assistance in developing detailed project plans and feasibility studies, and in proceeding through the environmental permitting process—activities for which obtaining private financing is often more difficult.

Based on indications from previous rounds of Climate Ready Program grant funding, we find that roughly \$5 million per year for the next five years would be reasonable to help local governments make additional progress in SLR planning. After five years the Legislature can reassess the need to continue providing these planning funds, or whether by that point the local demand for funding has largely shifted from planning to project implementation. These planning funds would be in addition to the \$1.5 million per year in ongoing Greenhouse Gas Reduction Fund monies the Coastal Commission currently uses to support local governments in planning for SLR and updating their LCPs. (The Coastal Commission uses half of these funds for local grants and half for staff support.)

Support Coastal Adaptation Projects With Widespread Benefits. In addition to planning funds, we also recommend the Legislature support local jurisdictions in undertaking coastal adaptation projects. As discussed, project implementation

funding is the most significant barrier to adaptation progress cited by coastal professionals, and state funding plays a crucial role in helping to spur investments from other sources. However, limited state funding should not be used to benefit a small number of private property owners, but rather be targeted for projects with widespread benefits. To this end, we recommend the Legislature appropriate funding explicitly to support these types of projects. Specifically, we recommend the Legislature provide funding to SCC to administer a competitive grant program for coastal adaptation projects that fall under at least one of the following four categories:

- **Pilot Demonstration Projects to Test Adaptation Strategies.** Such projects should be designed to experiment with innovative approaches, learn about which strategies are—or are not—most effective in different conditions, and include methods for disseminating lessons learned to other jurisdictions.
- **Projects With Broad Public Benefits.** Such projects should protect public resources such as beaches, wetlands, shoreline access, and fish and wildlife habitat.
- **Projects for Critical Infrastructure.** Such projects should demonstrate that they address significant risks to public health and safety by reducing potential damage to public infrastructure such as water treatment plants or highways.
- **Projects Addressing the Needs of Vulnerable Communities.** Such projects should benefit communities in which a large proportion of residents have comparatively low incomes and therefore likely would not otherwise be able to undertake adequate SLR preparation.

Facilitate Monitoring of State-Funded Demonstration Projects. We recommend the Legislature facilitate some multiyear monitoring, evaluation, and future modification—or “adaptive management”—of coastal adaptation projects. Specifically, we recommend that state grants provided for construction of coastal adaptation projects intended to pilot new approaches—as

described above—also include sufficient funding to conduct several years of post-construction follow-up activities. The Legislature can direct SCC to design adaptation project grant awards to support these additional costs.

In order to verify which types of coastal adaptation projects are most effective, project implementers will need to continue to observe and potentially modify them after construction is completed. While ongoing monitoring and adaptive management is recommended for any type of project—especially those that are nature-based—such practices are particularly essential for coastal adaptation projects for two reasons. First, because of the unprecedented challenge that SLR presents, many response strategies will necessarily be new and untested. Second, conditions will shift as sea levels rise, potentially affecting the project's original design and performance. These uncertainties add to the need to monitor the project to evaluate whether modifications are necessary in the coming years.

In most cases, when the state provides grant funding for capital projects, responsibility for undertaking—and paying for—post-construction activities such as maintenance and monitoring falls to the grantees. Because of the oft-mentioned fiscal constraints local governments face, however, such activities do not always take place at a robust level. For these coastal adaptation projects, we believe a strong rationale exists for the state to help support such costs and ensure that meaningful scientific monitoring and adaptive management occur. This is because of the statewide usefulness of learning lessons from new and innovative coastal adaptation projects, as well as the importance to the public of ensuring their ultimate success in mitigating SLR impacts. We believe that the state helping to fund such follow-up work will ensure that it takes place and thereby help to inform the quality and amount of knowledge about effective adaptation strategies across the state. That, in turn, can help address the need that local governments cite for additional information about the trade-offs of coastal adaptation strategies. Post-construction follow-up activities can help answer the key

questions of “how well does the strategy work, does it last, and how can we make it work better?” To this end, we recommend the state require that as a condition of receiving state funding, local grantees must submit regular project reports to SCC summarizing project performance and lessons learned. SCC could then disseminate this information through the aforementioned regional climate collaborative groups and the California Climate Adaptation Center and support network we propose below.

While the amount needed for these follow-up activities will vary by project, a rough guideline might be about 10 percent of the amount provided for construction. For example, if SCC allocated a grant of \$10 million to construct a living shoreline project, it might then also provide an additional \$1 million to be used over several years for monitoring and adaptive management. This proportional approach likely will not cover all of the associated costs. As with project construction costs, state funding can help enable and enhance monitoring efforts, but project proponents should be expected to help pay the full costs of post-construction activities.

In addition to project-specific follow-up activities, we recommend the Legislature allow SCC to use a portion of adaptation project funds to conduct—or award grants for another entity to conduct—large-scale scientific monitoring on coastal conditions. For example, this could include tracking changes in beach width along a whole region of coastline—rather than each jurisdiction or project grantee having to conduct such monitoring for its own portion of beach. Such larger scale monitoring not only could take advantage of economies of scale, it also could allow for analyses across different locations to test the effectiveness of strategies employed in one area as compared to those in another.

Implementing this recommendation need not require a separate appropriation from the Legislature. However, the Legislature should consider these post-construction costs when determining the overall amount it wants to appropriate for coastal adaptation.

Provide Information, Assistance, and Support

As discussed earlier, local governments are struggling with how to determine next steps in preparing for SLR and seeking tools to help make such decisions. The state is uniquely positioned to take advantage of economies of scale, centralized communication forums and expertise, and state-level authority to help support local adaptation efforts. We have three specific recommendations to help advance these objectives.

Establish California Climate Adaptation Center and Regional Support Network. We recommend the Legislature establish a system for providing technical support and information to local governments on adapting to climate change impacts. The goal of this system would be to connect practitioners undertaking adaptation work with state policy and guidance, useable scientific information, and technical assistance that is both easily accessible and applicable. This system would seek to address local governments' frequently expressed need for "a person to call" to answer their questions and provide real-world advice, guidance, expertise, and examples of how to proceed with adaptation work. Because of the many climate-related challenges facing local governments, we recommend this effort not be limited to coastal adaptation and the threat of SLR but rather be designed to support a broad array of climate adaptation efforts.

Specifically, we recommend the Legislature establish the California Climate Adaptation Center with funding for a staff of roughly 20 employees. We estimate this would cost a few million dollars annually. We recommend that about half of these employees be located in a central location—such as Sacramento—and represent expertise in several disciplines essential to adaptation work. For example, these could include experts in planning, engineering, land use law, finance, and community outreach. The remaining staff could be located in regional locations—ideally co-located with staff from our proposed regional climate collaborative groups—so they can be an easily accessible and familiar "go-to" resource for nearby local

governments. These regional staff should seek to develop robust relationships at the local level and be engaged in local planning and collaborative meetings and efforts. Regional-based staff should work together with Center-based staff as a network to share information and best practices across the state, disseminate updates and guidance from various state agencies to local governments, as well as provide feedback from local governments back to state policymakers about challenges and needs at the local level. The Center should also be charged with establishing formal partnerships with the state's universities and coastal researchers to help provide a bridge between local governments and the latest scientific information. Because of its work overseeing the Integrated Climate Adaptation and Resilience Program, we recommend the Center be housed under OPR as an expansion of that effort. As discussed earlier, that program is intended to develop a cohesive and coordinated response to the impacts of climate change across the state.

Develop Standard Methodology for Economic Analyses of SLR Risks and Responses. We recommend the Legislature require OPC to contract for development of a standardized methodology and template for conducting economic analyses of SLR risks and adaptation strategies. This template can serve as a model for local governments to use in conducting their own analyses to assess their local risks and the best options for taking action. It should guide local governments on *how* to undertake such an analysis, as well as include a database of pre-populated statewide data (such as employment data by sector) which local governments can download in lieu having to search for it on their own. In addition to traditional market-based factors, this methodology should provide a framework for how local governments might assign value to nonmarket factors such as ecosystem services and maintaining—or losing—local beaches. Moreover, it should help local governments in evaluating the economic implications of a no action alternative to help them truly assess the trade-offs of potential adaptation steps they might be considering.

Providing such a tool for local governments across the state to use would achieve three

important goals. First, the availability of such a tool likely would lead to more local governments conducting in-depth analyses of how SLR might impact their communities. This increased awareness can in turn help spur additional preparation efforts across the state and make sure such efforts are more data driven and cost effective. Second, the state completing this activity can take advantage of economies of scale and save taxpayers the costs of many individual local governments having to develop or pay the full costs of such work on their own. While local governments still will incur some costs to undertake a customized local economic assessment, their expenses will be lower since they will not have to start “from scratch.” Third, a consistent methodology would allow the state to compare and compile data across jurisdictions that conduct such analyses to get a sense of statewide economic risk and inform how future state investments should be targeted.

Understanding the costs and benefits of various adaptation approaches—including the implications of avoiding taking action—is essential input for local governments weighing the trade-offs of how they should proceed. Moreover, such information will be key for them to explain and defend their decisions to local constituents—especially when such decisions might be politically unpopular.

In order to support the development of a standardized methodology and template, we estimate that OPR would need roughly \$1 million in one-time funding. A handful of examples of such economic analyses exist that can serve as models for developing a statewide template, including those conducted for San Diego County, the City of Imperial Beach, and the five-state Mid-Atlantic region along the east coast of the U.S.

Require Review of How Regulatory Permitting Processes Can Be Made More Efficient. We recommend the Legislature direct CNRA to explore and implement options for a more coordinated and efficient regulatory review process for coastal adaptation projects, and to report back to the Legislature on suggestions for improvement. This would be similar to the work the agency is

undertaking to help simplify and expedite the permitting process for forest health projects. CNRA might identify ways to improve current processes without changes to statute or additional resources, such as by directing departments to consult with each other during their permit review process and to coordinate the conditions and requirements they impose on project proponents. CNRA’s review might also reveal that changes to current law or regulations are needed to address existing permit complications. For example, BCDC recently revised its policies to allow for the placement of increased amounts of sediment along the shore of the SF Bay for projects that will restore and enhance the natural habitat. Additionally, CNRA should look at the degree to which additional funding might be necessary to help expedite review and implementation of coastal adaptation projects. The agency should also evaluate the example of the SF Bay Restoration Regulatory Integration Team to see if similar practices could and should be replicated in other regions of the state.

The state’s environmental permitting system is designed to protect valuable public trust resources. We are not recommending these important protections be repealed, removed, or ignored. However, the current protracted review process is both causing undue delays for implementing coastal adaptation projects and inhibiting innovative approaches that need to be tried and tested. Because the state has a vested interest in local governments making progress in preparing for SLR and avoiding potential damage—and in them taking such action soon—we recommend reducing regulatory obstacles that currently prevent them from doing so.

Implementing this recommendation will not have any upfront costs for the state. CNRA’s review, however, could conclude that significantly expediting permit review time lines would require hiring additional state department staff. The Legislature could then decide if a compelling case exists that departments cannot implement CNRA’s suggested changes within existing resources and whether to provide additional funding to improve permitting processes.

Enhance Public Awareness of SLR Risks and Impacts

Coastal communities cite the lack of support for—and, in some cases, direct resistance to—coastal adaptation activities from the public and locally elected leaders as a key barrier to SLR preparation. This is primarily due to a lack of public awareness about coming threats and the need to address SLR. As such, we offer three recommendations for how the state can help build such awareness.

Require Coastal Flooding Disclosures for Real Estate Transactions. We recommend the Legislature adopt legislation requiring that the sale of coastal properties in areas at risk of flooding from SRL be accompanied by a “Vulnerable Coastal Property Statement.” This would help to ensure that buyers are aware of the risks posed by SRL and other coastal hazards. Instituting such a requirement would be comparable to the real estate disclosures currently required for properties at risk of forest fires, earthquakes, or other types of flooding. Requiring this information would help spread awareness about SLR among the public and allow Californians to make informed decisions about the risk they are assuming before purchasing coastal properties.

Implementing this recommendation would necessitate the state determining how to define which areas—and encompassed properties—should be designated as “vulnerable” and require disclosures. Moreover, the state would have to decide which time lines and assumptions to make in selecting from the many potential SLR scenarios that scientists have developed. Several tools exist that could be utilized to draw these maps, including the CoSMoS system developed by USGS that incorporates coastal erosion trends. We recommend the Legislature direct OPC to assemble a technical advisory committee to help determine the best approach for implementing this recommendation, including a process for how often the maps should be updated to reflect updated projections.

While uncertainty exists around the degree and time line for SLR, this is no different from the natural hazards for which the state already

requires real estate disclosures. The state has already determined that despite the inherent uncertainty, alerting purchasers when a property faces a *potential* risk of future damage from earthquakes, fires, or floods is important public policy. The same rationale applies to potential—and, in some areas, probable—coastal flooding. Indeed, the case for coastal disclosures is arguably even stronger since the certainty of some amount of SLR occurring is greater than that associated with threats such as earthquakes.

We acknowledge that implementing this recommendation has the potential to impact local property tax revenues if such disclosures result in a reduction in the market value of affected coastal properties. Specifically, if a property sells for a lower price than it otherwise would have because of the buyers’ heightened awareness of SLR-related flood risks, the local governments would receive less local property tax revenue than if it sold for a higher price. As noted earlier, to the degree local property tax revenues drop, this also could affect the state budget. This is because the California Constitution requires that decreases in certain local property tax revenues used to support local schools be backfilled by the state’s General Fund. Despite these potential implications, we believe a strong case still exists for the state to facilitate greater public awareness about the risks that buyers are assuming when purchasing certain coastal properties. Moreover, the value of properties that experience flooding when sea levels reach higher levels will eventually decrease regardless of whether or not the state requires disclosure warnings.

Require That State-Funded Adaptation Plans and Projects Include Robust Public Engagement. If the Legislature opts to establish new grant programs to support coastal adaptation planning and projects at the regional and local levels, we recommend it ensure public outreach and engagement are key components of those programs. Specifically, in the statutes it adopts to create these programs, we recommend directing implementing departments—such as SGC and SCC—to include meaningful public involvement requirements in the criteria they develop for adaptation planning and project

grant programs. We also recommend requiring that the administering departments validate the adequacy of the public engagement efforts that were undertaken by grant recipients before approving final plans and grant awards. That is, final approval of plans and grants by the state should be contingent upon the grantee showing evidence that it met state requirements for public engagement.

Outreach to and participation of the public will be essential to both regional and single-jurisdiction planning processes to help develop societal awareness about SLR and climate risks and to build acceptance for the adaptation steps that will be undertaken. Moreover, to ensure the needs of vulnerable communities are included and accurately reflected in the plans and proposed projects, undertaking broad-based outreach efforts in coordination with community-based organizations is important.

Direct State Departments to Conduct Public Awareness Campaign About Threats Posed by SLR. We recommend the Legislature direct state departments to intensify their efforts to increase public awareness of the time lines, risks, and options for addressing SLR. This should include developing resources which local governments can use in their own local public education efforts, such as templates for social media campaigns, posters and signs, and easily customizable inundation maps. While certain state departments have developed some resources—such as reports, fact sheets, and webinars—most are not widely disseminated and many are not particularly user-friendly. For example, many documents contain technical scientific language and do not clearly explain how SLR will affect California residents' daily lives in the coming years.

We believe that state-level efforts to educate the public about SLR can help local governments in several ways. Among the most important potential benefits would be to help the public better understand the potential risks associated

with SLR and develop a sense of engagement in and urgency for taking action. Not only could this reduce the active public *resistance* that some local governments are encountering in their SLR preparation activities, it could foster an atmosphere of organized *support* and advocacy for such efforts. Moreover, greater awareness could build encouragement for—and pressure on—local officials to take action. Another key advantage of undertaking such a campaign on a statewide basis is that it would preclude the need for each individual coastal community to develop such materials and strategies on its own, thereby saving taxpayer money.

We recommend the Legislature direct state departments to focus on increasing public awareness and disseminating information within their existing resources by making it a priority within their regular operations. This could include BCDC, SCC, and the Coastal Commission dedicating a small portion of the annual funding that they receive from NOAA to implement the federal Coastal Management Act towards expanding public awareness activities. Additionally, OPC reports that it recently entered a contract for roughly \$200,000 to initiate a public awareness campaign about SLR, which is a positive step in this effort. We recommend the Legislature request regular updates from OPC on the progress and perceived effectiveness of this campaign and what additional steps might be merited—including, potentially, expanding the scope and reach of this work. The Legislature can then evaluate whether additional appropriations might be merited in the future to make these efforts more widespread and effective. The “Save Our Water” water conservation campaign that the state undertook during the recent statewide drought can serve as an example of this type of effort, however that was a more expansive and expensive initiative than what we are recommending here.

FUNDING OPTIONS FOR IMPLEMENTING RECOMMENDATIONS

Multiple Funding Options Available. Given the relatively limited level of state involvement and funding in supporting local coastal adaptation efforts thus far, many of our recommended actions—unsurprisingly—would result in additional costs. We do not identify specific funding sources for each activity, as the Legislature has multiple options upon which it could rely.

Some of the costs associated with our recommendations could be significant, such as if the state opts to play a large role in supporting and expanding implementation of coastal adaptation projects. The state would need to rely on funding sources that can support significant—multimillion dollar—levels of spending for such projects, such as the General Fund or the Greenhouse Gas Reduction Fund. Other recommended actions, however, encompass more modest steps that are intended to help support local governments in their preparation efforts. For these activities—such as supporting regional climate collaborative groups or developing a template for undertaking economic analyses—the Legislature also has the option of using funding sources that are able to support smaller, less-costly expenditures. Such sources include the Environmental License Plate Fund, which provides roughly \$50 million annually from the sale of license plates for environmental programs and projects. The state has used this fund to support some coastal activities in the past. Additionally, over \$30 million remains unappropriated that voters authorized for coastal restoration and adaptation activities via Proposition 68, the 2018 natural resources bond. The Legislature could direct these resources for implementing some of our recommendations—particularly for supporting adaptation projects. As noted earlier, the Legislature is also contemplating proposals to ask voters to approve a new general obligation bond targeted for climate adaptation activities, which would obligate future General Fund dollars to repay the bond.

Both State and Local Governments Could Look to Alternative Funding Sources to Support Adaptation Activities. In addition to the funding

sources upon which the state has historically relied for coastal activities—the General Fund, general obligation bonds, the Greenhouse Gas Reduction Fund, and the Environmental License Plate Fund—the Legislature could also prioritize other existing sources to increase support for coastal adaptation activities. For example, the Legislature could direct CalOES to use a portion of the federal funds the state often receives from FEMA through the Hazard Mitigation Grant Program for these purposes. As discussed earlier, the state receives significant amounts of these funds in years after it experiences federally declared disasters. The Legislature historically has deferred to CalOES on how to utilize these funds, and with a few limited exceptions, thus far the department has not targeted coastal adaptation projects as a priority area of focus. The Legislature could also direct Caltrans and the California Transportation Commission to place a greater priority on SLR adaptation projects in its use of transportation funds along the coast.

Similarly, local governments likely also will need to identify funding sources to support intensified climate adaptation efforts. This could include designing adaptation projects that allow them to take advantage of other available funding sources such as those targeted for transportation, recreation, or water system infrastructure maintenance and replacement projects. For example, if a local government already has plans to upgrade an aged water treatment plant using rate-payer funding, it could incorporate features that would make the project more resilient to future SLR, such as by elevating or moving key components of the facility.

Local governments could also pass new taxes, fees, or bonds at the local level. A few examples of such strategies have already been approved by local voters. These include Measure AA in the nine-county SF Bay Area (which imposed a new parcel tax to be used for shoreline restoration projects), Proposition A in the City of San Francisco (which authorized a \$425 million local general obligation bond to repair and improve the Embarcadero seawall), and Measure W in Los Angeles (which imposed a parcel

tax to be used for stormwater capture projects that improve water quality and may also increase water supply in the face of climate change and increased droughts).

Larger Fiscal Context of Implementing LAO Recommendations. For all of the state funding sources we have identified as options for implementing our recommendations—both large and comparatively smaller—the Legislature already faces many competing priorities. Directing funding to implement our recommended actions and support local governments in their coastal adaptation efforts would mean less funding available from any of these sources for other state expenditures. As with all its budgetary decisions, the Legislature will have to balance its multiple priorities. While spending on coastal adaptation now to prevent higher disaster response and recovery costs in the future makes sense, this is not the only pressing issue facing the state and its budgetary resources. For example, the Legislature has also set important goals for addressing housing and homelessness, paying

down unfunded pension obligations, and expanding access to child care and health care—all of which could create pressures for additional state funding. Moreover, multiple indicators suggest an economic slowdown could be on the horizon, which would constrain state revenues and further complicate the Legislature’s budget decisions. The same types of fiscal trade-offs also exist at the local level.

We note, however, the coming decade is a key period for escalating the pace and scale of adaptation progress. As discussed, taking action soon will allow coastal communities—and the state—to be more strategic about phasing in responses to SLR, and to learn what approaches work best before the risk of severe flooding becomes imminent. We believe that this sense of urgency and the costly implications of failing to adequately prepare for SLR merit consideration of our recommendations alongside other state priorities, especially while the state is still in a strong fiscal position.

CONCLUSION

Recommended Actions Represent Next Step in What Will Be a Multiyear, Multistage Process.

The overall goals of our recommendations are to prompt more widespread progress in local coastal preparation efforts. We believe implementing our recommended steps would help build partnerships and capacity at the local level that will both extend adaptation activities to more coastal communities and assist those that are already engaged in planning efforts to transition into implementing policies and projects. While these are incremental steps that will not be sufficient to address all the anticipated impacts of SLR, they represent prerequisites along the path to more robust statewide preparation. Specifically, in order to adequately address the potential impacts of SLR and avoid costly damage and disruption, local governments must first establish collaborative cross-jurisdictional relationships, strengthen their knowledge base about which strategies work (and which do not), and increase public awareness about the coming threats. The Legislature assisting

them in these tasks in the near term will help lay the groundwork for local governments to tackle the more difficult—and costly—decisions and actions in future years as floodwaters become more imminent.

Given the scope of this report, we developed our recommendations specifically to expedite coastal adaptation progress at the local level. Yet we believe adopting our suggested actions could help facilitate state-level adaptation efforts as well. Specifically, several of our recommendations also would benefit the state departments responsible for preparing state-owned assets—such as highways and parks—for the impacts of climate change and SLR. For example, state department actions could be informed and improved by the expertise housed within our proposed California Climate Adaptation Center. Similarly, state departments that need to evaluate the potential economic impacts of SLR on state assets could avoid incurring some additional costs if they could rely on a state-developed standardized methodology to conduct such analyses.

Additional Issues Will Need Legislative Attention in Future Years. This report is meant to be a preliminary step at looking at how the Legislature can help address the specific climate challenge of SLR. Additional activities and investments will be needed as coastal impacts become more pressing and prevalent in the future. We knowingly did not address certain issues within this report, either because they were too complex for us to study in detail within our time frame or because they fell outside of the scope we identified for this report. In order for local governments and the state to effectively tackle the coming challenges presented by SLR and other climate risks, however, the Legislature will need to confront some of these difficult topics in the coming years. These include:

- ***Clarifying Uncertain Legal Questions.*** At some point, statutory clarification likely will be needed to address some unprecedented legal issues. These include questions about when and where seawalls can be built and fortified, given the associated trade-offs between protecting the assets behind them and the resulting erosion of nearby beaches.
- ***Defining Statewide Priorities and Responsibilities.*** As threats become more pressing, the Legislature may want to set statewide priorities and expectations for responding to SLR. For example, it will have to weigh whether the state should step in to compel local jurisdictions to protect health and safety and public resources if they fail to adequately prepare for coastal flooding or if they plan to implement actions that will have negative impacts on beaches. The Legislature may also consider establishing statewide decision-making guidelines for which types of resources and facilities should be protected and which might have to be abandoned as sea levels rise.
- ***Rethinking How and Where We Build.*** As water levels rise and areas of the coast begin to experience regular flooding, it will constrain where new development can take place, and some existing properties will have to be renovated or relocated. These challenges will be particularly difficult given the state's

existing housing shortage, and therefore an effective response will require thorough and strategic state-level planning and guidance. The Legislature may want to consider how to help local governments confront land use decisions complicated by SLR, including how to facilitate and encourage needed relocations, whether to place restrictions on rebuilding after a flood event, and how to support innovative and resilient approaches to building and development.

- ***Responding to Changes in Insurance Markets.*** As has started to occur in areas of high wildfire risk, the cost and availability of property insurance in coastal communities likely will change as the risk of SLR-related flooding increases. The Legislature may want to determine what role the state should play to support California residents and business owners when property insurance becomes unaffordable or unavailable for some existing properties.
- ***Addressing Additional Climate-Related Risks and Challenges.*** Clearly, SLR is not the only way that the effects of climate change will impact California. The Legislature will also need to determine how to prepare—and help local governments to prepare—for other challenges such as increases in intense heat events, droughts, wildfires, and inland flooding from severe storms.

Further legislative involvement in addressing these issues will be important—particularly when statutory changes are needed to clarify and resolve issues, offer guidance, or provide funding. The Legislature has many avenues through which to engage in these topics, including holding policy and select committee hearings, proposing and participating in robust deliberation over legislation, and requesting research and input from experts within state departments and universities. While the challenges facing the state's coastline are daunting, the science is clear—sea levels are rising. The impacts these coming changes ultimately will have on California's residents, economy, and natural resources will depend directly upon the actions that local governments and the state take to prepare in the coming years.

APPENDIX

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LAO PUBLICATIONS

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What Threat Does Sea-Level Rise Pose to California?

Summary

Among Its Other Challenges, California Continues to Face the Looming Impacts of Climate Change and Rising Seas. While the coronavirus disease 2019 (COVID-19) pandemic and resulting economic impacts have rightly drawn the focus of the Legislature’s and public’s attention since March 2020, other statewide challenges continue to approach on the horizon. Among these are the impending impacts of climate change, including the hazards that rising seas pose to California’s coast. Scientific estimates suggest the magnitude of sea-level rise (SLR) in California could be at least half of one foot in 2030 and as much as seven feet by 2100. Moreover, storm surges, exceptionally high “king tides,” or El Niño events could produce notably higher water levels than SLR alone.

Impacts of SLR Could Be Both Extensive and Expensive. Encroaching seas and waves could result in negative impacts along California’s coast not only through increased flooding, but also by eroding beaches and cliffs, and by raising coastal groundwater levels. This report describes available research on how rising seas threaten California’s coast in seven categories: public infrastructure, private property, vulnerable communities, natural resources, drinking and agricultural water supplies, toxic contamination, and economic disruption. Some key findings from existing research include:

- Between \$8 billion and \$10 billion of existing property in California is likely to be underwater by 2050, with an additional \$6 billion to \$10 billion at risk during high tides.
- Four feet of higher water levels would cause daily flooding for nearly 28,000 socially vulnerable residents in the San Francisco Bay Area region.
- Under scenarios of three feet to six feet of SLR, up to two-thirds of Southern California beaches may become completely eroded by 2100.

Important to Include SLR Preparation Activities Among the State’s Priorities. Because the most severe effects of SLR likely will manifest decades in the future, taking actions to address them now may seem less urgent compared to the immediate pandemic-related challenges currently facing the state. Moreover, the recent economic downturn complicates SLR preparation efforts, as fiscal resources are more limited at both the state and local levels. However, given the significant threats posed by SLR in the coming decades—and the additional public safety and economic disruptions that will result absent steps to mitigate potential impacts—the state and its coastal communities cannot afford to defer all preparation efforts until economic conditions have fully rebounded from the recent crisis. The state and local governments can undertake some essential near-term preparation activities—such as planning, establishing relationships and forums for regional coordination, and sharing information—with relatively minor upfront investments.

INTRODUCTION

While the coronavirus disease 2019 (COVID-19) pandemic and resulting economic impacts have rightly drawn the focus of the Legislature's and public's attention since March 2020, other statewide challenges continue to loom on the horizon. Among these are the impending impacts of climate change, including the hazards that rising seas pose to California's coast. Science has shown that the changing climate will result in a gradual and permanent rise in global sea levels. Given the significant public infrastructure, housing, natural resources, and commerce located along California's 840 miles of coastline, the certainty of rising seas poses a serious and costly threat.

Strong Case Exists for Including Sea-Level Rise (SLR) Preparation Activities Among the State's Priorities. Because the most severe effects of SLR likely will manifest decades in the future, taking actions to address them now may seem less pressing compared to the immediate pandemic-related challenges currently facing the state. The magnitude of the potential impacts, however, mean that the state cannot afford to

indefinitely delay taking steps to prepare. Waiting too long to initiate adaptation efforts likely will make responding effectively more difficult and costly. Planning ahead means coastal adaptation actions can be strategic and phased, helps "buy time" before more extreme responses are needed, provides opportunities to test approaches and learn what works best, and may make overall adaptation efforts more affordable and improve their odds for success. The next decade represents a crucial time period for taking action to prepare for SLR.

This Report Describes Threats Posed by Rising Seas. This report is intended to help the Legislature and the public deepen their knowledge of the threats that California faces from SLR. Developing a thorough understanding of the possible impacts associated with rising seas is an essential first step for the Legislature in determining how to prioritize efforts to help mitigate potential damage and disruption. Moreover, increasing public awareness about the coming threats and the need to address SLR will be an important component in building support for and acceptance of the adaptation steps that should be undertaken.

CALIFORNIA WILL EXPERIENCE RISING SEAS AND TIDES

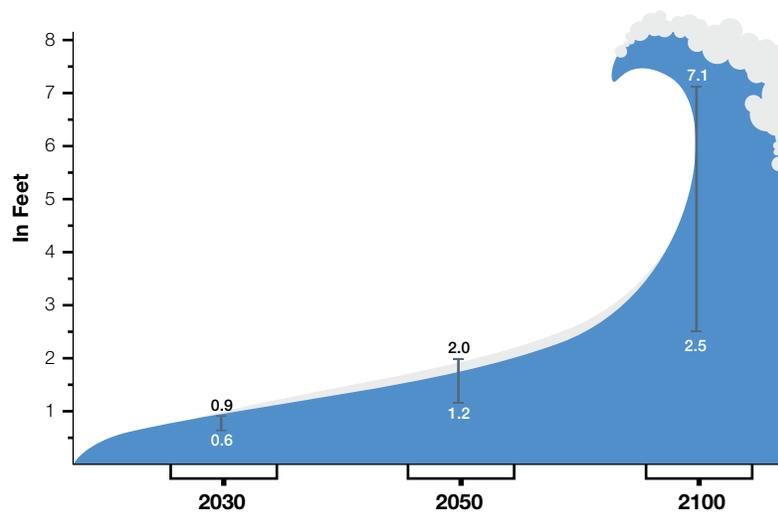
Seas Will Rise in Coming Decades. Climate scientists have developed a consensus that one of the effects of a warming planet is that global sea levels will rise. The degree and timing of SLR, however, still is uncertain, and depends in part upon how much global greenhouse gas emissions and temperatures continue to increase. **Figure 1** displays recent [scientific estimates](#) compiled by the state for how sea levels might rise along the coast of California in the coming decades. (The figure displays data for the San Diego region, but estimates are similar for other areas of the California coast.) As shown, the magnitude of SLR is projected to be about half of one foot in 2030 and as much as seven feet by 2100. These

estimates represent the range between how sea levels might rise under two different climate change scenarios. As shown, the range between potential scenarios is greater in 2100, reflecting the increased level of uncertainty about the degree of climate change impacts the planet will experience further in the future.

Storms and Future Climate Impacts Could Raise Water Levels Further. Although they would have substantial impacts, the SLR scenarios displayed in Figure 1 likely understate the increase in water levels that California's coastal communities will actually experience in the coming decades. This is because climate change is projected to contribute to more frequent and extreme storms,

Figure 1

California Sea Levels Are Projected to Rise Significantly



Note: Range of projected sea-level rise scenarios for San Diego from the State of California Sea-Level Rise Guidance Document. Estimates represent the range between "likely" scenarios (66 percent chance of occurring) and scenarios with a 1-in-200 chance of occurring.

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and the estimates shown in Figure 1 do not incorporate periodic increases in sea levels caused by storm surges, exceptionally high "king tides," or El Niño events. These events could produce notably higher water levels than SLR alone. Moreover, the data displayed in the figure do not include possible extreme scenarios that incorporate the effects of potential ice loss from the West Antarctic Ice Sheet. The likelihood of these severe scenarios occurring is uncertain, but possible. If there is considerable loss in the polar ice sheets, scientists estimate the California coast could experience over ten feet of SLR by 2100.

RISING SEAS THREATEN THE CALIFORNIA COAST IN NUMEROUS WAYS

SLR Could Impact Coast Via Flooding, Erosion, and Rising Groundwater. Increased coastal flooding from encroaching seas and waves—in the form of both permanent inundation and episodic events caused by storms—is the most commonly referenced SLR risk. However, rising seas will also trigger other natural processes along California's coast that could lead to negative impacts, such as erosion and rising groundwater levels. Specifically, waves crashing comparatively further up the shore will erode sand away from coastal cliff walls and beaches. Additionally, in coastal communities where the underground water table is already close to the land surface, higher ocean water levels could also force up the water levels underneath the ground, leading to flooding.

For example, one recent [study](#) suggested that flooding from emergent groundwater in the San Francisco Bay Area could impact a larger area across the region than wave-induced flooding. (The state currently is funding an in-depth [assessment](#) of potential coastal groundwater inundation hazards and associated socioeconomic impacts to get a better understanding of associated risks.) **Figure 2** on the next page illustrates some of these potential impacts.

The natural processes triggered by rising sea levels and coastal storms will affect both human and natural resources along the coast. These impacts have the potential to be both extensive and expensive.

Figure 2

Sea-Level Rise Will Impact the California Coast in Multiple Ways

Flooding

Advancing seas and waves will cause both permanent and periodic flooding along the coast affecting buildings, infrastructure, and natural resources.



Erosion

Waves crashing further up the shore will erode sand away from beaches and coastal cliff walls.



Rising Groundwater

Higher ocean water levels could force up the water levels underneath the ground as well, leading to flooding, saltwater intrusion into fresh groundwater supplies, and toxic contamination by carrying hazardous materials to the surface.



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Below, we describe available research regarding how SLR threatens California's coast in the following seven categories:

- Public infrastructure.
- Private property.
- Vulnerable communities.
- Natural resources.
- Drinking and agricultural water supplies.
- Toxic contamination.
- Economic disruption.

Public Infrastructure

Damage to public infrastructure located along California's coast represents one of the greatest threats from SLR, as these assets are key components of state and local systems of public health, transportation, and commerce. Examples of publicly owned infrastructure located along the coast include water treatment plants, roads and highways, railways, piers and marinas, and public recreational trails. Depending upon the specific location of these facilities, they could be impacted by both flooding from waves or rising groundwater levels, as well as damage from cliff erosion. In addition, flooding from SLR threatens several important California ports and airports—including those in Long Beach, Los Angeles, San Diego, and Oakland—that are managed by public special districts.

For example, a March 2020 [study](#) of SLR vulnerability in the San Francisco Bay Area found that four feet of higher water levels (either from SLR alone or in combination with periodic storm surges) would expose key transportation and commerce infrastructure in the region to flooding. Locations identified as being at risk include: 59 miles of highways and bridges, 48 miles of freight rail lines, 20 miles of passenger rail lines, 11 acres of ferry terminals, 780 acres of seaports, and 4,670 acres of airports. Such flooding could render this important infrastructure unusable for extended periods of time—or, in some cases, permanently—and require costly repairs or modifications.

A different [study](#) conducted in 2018 estimated potential impacts from SLR on wastewater infrastructure along the coast. Researchers found

that 15 wastewater treatment plants in California will be exposed to flooding with three feet of SLR, growing to 36 facilities with six feet of SLR. Facilities in the San Francisco Bay region are particularly vulnerable, accounting for 30 of those 36 statewide plants, with rising groundwater levels magnifying flood risk. The study also found that with just over three feet of SLR, 28 percent of the plants in the Bay Area region will experience flooding on at least one-quarter of their surface areas. Flooding of such facilities could cause them to become inoperable for extended periods of time and create a risk of sewage leaks, posing serious threats to public health.

The erosion of coastal cliffs in California is already beginning to cause transportation disruptions. For example, in winter 2019, a portion of railway tracks used to carry passengers between Los Angeles and San Diego had to be closed to repair damage from a bluff collapse near the City of Del Mar.

Private Property

In addition to publicly owned assets, private property is also threatened by the effects of SLR. Specifically, both houses and businesses located along the coast face the threat of increased flooding, and those in cliff-side locations face damage from eroding bluffs.

A 2015 [economic assessment](#) by the Risky Business Project estimated that if current global greenhouse gas emission trends continue, between \$8 billion and \$10 billion of existing property in California is likely to be underwater by 2050, with an additional \$6 billion to \$10 billion at risk during high tide. Moreover, a recent [study](#) by researchers from the U.S. Geological Survey (USGS) estimated that by 2100, roughly six feet of SLR and recurring annual storms could impact over 480,000 California residents (based on 2010 census data) and \$119 billion in property value (in 2010 dollars). When adding the potential impacts of a 100-year storm—a storm with a one-in-100 likelihood of occurring in a given year—these estimates increase to 600,000 people and over \$150 billion of property value.

Vulnerable Communities

While many coastal communities contain affluent neighborhoods, many of those communities include more vulnerable populations who also face the risk of more frequent flooding and damage from erosion. Those who will be affected include renters (who are less able to prepare their residences for flood events), individuals not proficient in English (who may not be able to access critical information about potential SLR impacts), residents with no vehicle (who may find it more difficult to evacuate), and residents with lower incomes (who have fewer resources upon which to rely to prepare for, respond to, and recover from flood events).

A 2009 [study](#) found that flooding from four and a half feet of rising seas combined with a 100-year storm in California would affect 56,000 people who earn less than \$30,000 annually, 45,000 renters, and 4,700 individuals who are linguistically isolated and less likely to understand flood warnings. Additionally, a recent [report](#) estimated that four feet of higher water levels would cause daily flooding for nearly 28,000 socially vulnerable residents in the San Francisco Bay Area region. (The researchers defined social vulnerability using a variety of indicators, including income, education level, English proficiency, age, disability status, housing status, citizenship status, and access to vehicles.)

Natural Resources

In addition to buildings and infrastructure, SLR also poses a threat to ecological resources across the state. Flooding has the potential to inundate coastal beaches, dunes, and wetlands. This threatens to impair or eliminate important habitats for fish, plants, marine mammals, and migratory birds. Higher sea levels will also cause salt water to encroach into—thereby degrading—coastal estuaries where fish and wildlife currently depend upon freshwater conditions. A 2018 [report](#) by the State Coastal Conservancy and The Nature Conservancy found that 55 percent of California's existing coastal habitats are highly vulnerable to five feet of SLR, including 60 percent of the state's iconic beaches, 58 percent of rocky intertidal habitat, 58 percent of marshes, and 55 percent of tidal flats. The researchers estimated that five feet

of SLR would also drown 41,000 acres of public conservation lands and add stress to 39 species whose populations have already been classified as rare, threatened, or endangered.

Humans are also dependent on these coastal environments, both for the natural processes that they provide (such as filtering stormwater runoff to improve water quality and providing protection from flooding), as well as their recreational benefits. Millions of California residents visit the coast annually to fish, swim, surf, and enjoy nature, particularly along the one-third of the coastline owned by the State Park system. The state's [Safeguarding California Plan](#) cites that for every foot of SLR, 50 feet to 100 feet of beach width could be lost. Moreover, a recent scientific [study](#) by USGS researchers predicted that under scenarios of three feet to six feet of SLR, up to two-thirds of Southern California beaches may become completely eroded by 2100.

Drinking and Agricultural Water Supplies

SLR has the potential to impact the fresh water resources upon which Californians depend for drinking, bathing, and growing crops in two primary ways.

First, SLR may cause salty sea water to contaminate certain fresh groundwater supplies. Some coastal regions of the state are heavily dependent on drawing fresh water from underground aquifers to support their population and to grow crops. As illustrated in Figure 2, in some areas rising sea levels are likely to push saltwater up into these groundwater basins, thereby degrading key fresh water resources. The degree of this risk is still unknown and being researched, and will vary across the state based on factors like local geology and hydrology. Additionally, SLR may exacerbate conditions for coastal fresh water aquifers that already are experiencing some degree of saltwater intrusion due primarily to their current pumping practices—including in the Pajaro and Salinas Valleys, the Oxnard Plain, and certain areas in Los Angeles and Orange Counties.

Second, SLR could impair one of the state's key water conveyance systems. The State Water Project brings fresh water supplies to 27 million

people and to irrigate 750,000 acres of farmland. The system is highly dependent on the integrity of the levees in the Sacramento–San Joaquin Delta to successfully move this water from the northern to the central and southern parts of the state. Higher sea levels pushing into the Delta from the ocean through the San Francisco Bay, however, will place more pressure on those levees. Should the levees in the southern part of the Delta be damaged and breached by these higher water levels, it would cause salt water to flood further into the estuary. This could contaminate the fresh river water supplies that currently pass through the Delta into the State Water Project’s pumps and canals. Additionally, even if levees remain undamaged, SLR will on the natural bring salty tides further into the Delta estuary. This will require the state to direct greater flows of fresh river water to “push back” on those tides in order keep saltwater away from the conveyance pumps located at the southern end of the Delta. [Research](#) suggests that such conditions would therefore likely decrease the amount of freshwater supplies available for exporting via the State Water Project.

Toxic Contamination

Flooding and rising groundwater levels caused by SLR could also threaten public health by exposing coastal residents to toxic contamination. Specifically, in areas where underground sea water pushes the water table up towards—or above—the ground surface, water could also damage and intrude into underground sewer pipes and systems. This could lead to more prevalent incidents—particularly during high tides and storms—of raw sewage seeping into fresh groundwater aquifers or backing up into streets and homes. Additionally, water infiltrating upward may flow through hazardous contaminants currently buried in the soil and carry them toward the surface, thereby distributing pollutants into fresh groundwater supplies and surface soils, as well into stormwater runoff that flows through local streets and fields. Contaminated lands located along the coast and bay at risk of both surface and groundwater flooding include active and closed landfills, as well as “brownfields” which are undergoing or require cleanup—such as federal Superfund sites, military

cleanup sites, and California Department of Toxic Substances Control sites. Flooding from SLR could also lead to toxic contamination from facilities that generate and store hazardous materials, such as laboratories, manufacturing facilities, and gas stations. Floodwaters could penetrate both surface-level and underground tanks and force out toxic liquids, or liberate waste from pits or piles.

Available [research](#) suggests the threat of SLR causing harmful contamination is significant. For example, [research](#) suggests that more than 330 facilities across California that contain hazardous materials and are being regulated by the U.S. Environmental Protection Agency are at risk of flooding with 1.4 meters (about five feet) of SLR combined with a 100-year storm. Additionally, a [study](#) undertaken in Contra Costa County found that 28 brownfield sites within the county are at risk of flooding with two feet of SLR combined with a 100-year flood, growing to 38 sites with six feet of SLR. (The study did not consider the potential compounding impacts of groundwater flooding.) These sites contain 68 different contaminants of concern, including various metals, corrosive materials, petroleum products, volatile organics, and pesticides. The study found that “these contaminants can potentially affect soil, sediments, sediment vapor, groundwater, or surface water.”

Economic Disruption

The potential impacts of SLR could have negative impacts on the economy and tax base—both locally and statewide—if significant damage occurs to certain key coastal infrastructure and other assets. For example, according to California’s [Fourth Climate Change Assessment](#), the state’s ports were the destination for \$350 billion in goods imported to the U.S. in 2016—by far the largest of any state. This economic activity would be disrupted by flooding of the docks, surrounding roadways, or adjacent railways through which goods are distributed. The productivity of the state’s workforce—and associated economic output—would also be affected by SLR. For example, a recent [study](#) found that over 104,000 existing jobs in the San Francisco Bay Area—including from some of the highly successful technology companies located along the Bay’s

shore—would need to relocate or be lost under a scenario of four feet of flooding in the region.

Moreover, the potential erosion of beaches associated with SLR would impact not only Californians' access to and enjoyment of key public resources, but also beach-dependent local economies. For example, [research](#) on the potential economic impacts of SLR specific to the San Diego region found that the tourism and recreation industries face the greatest vulnerabilities. Overall, the study found that about three feet of SLR combined with a 100-year storm would pose a threat to 830 business establishments in San Diego County, which could in turn affect 15,000 jobs, \$2 billion in property sales, and \$2 billion in regional gross domestic product. A scenario of six feet of

SLR combined with a 100-year storm increases the scope of this vulnerability to over 2,600 business establishments, which would affect 49,000 jobs, \$8 billion in sales, and \$6.1 billion of the county's gross domestic product.

Additionally, if property values fall considerably from the increased risk and frequency of coastal flooding, over time this will affect the annual revenues upon which local governments depend. To the degree local property tax revenues drop, this also could affect the state budget in some years because the California Constitution could require that losses in certain local property tax revenues used to support local schools be backfilled by the state's General Fund.

CONCLUSION

Coastal Adaptation Activities Can Help Lessen SLR Impacts. While the risks California faces from SLR are great, the state and local governments can take steps to prepare for and help mitigate against potential impacts. The state, coastal communities, and private property owners essentially have three categories of strategies for responding to the threat that SLR poses to assets such as buildings, other infrastructure, beaches, and wetlands. Specifically, they can (1) **protect**, by building hard or soft barriers to try to stop or buffer the encroaching water and keep the assets from flooding; (2) **accommodate**, by modifying the assets so that they can manage regular or periodic flooding; or (3) **relocate**, by moving assets from the potential flood zone to higher ground or further inland.

State Can Play Key Role in Supporting Local Adaptation Efforts. Although much of the work to prepare for the impacts of SLR needs to take place at the local level, the state can help. For example, the state can take steps to help (1) foster regional-scale collaboration; (2) support local planning and adaptation projects; (3) provide information, assistance, and support; and (4) enhance public awareness of SLR risks and impacts. Please see our December 2019 report, [Preparing for Rising Seas: How the State Can Help Support Local Coastal Adaptation Efforts](#) for more

discussion of how the Legislature can support local governments in their SLR preparation efforts.

Certain SLR Preparation Efforts Can Be Undertaken Despite More Limited Fiscal Resources. The recent COVID-19 pandemic and economic downturn complicate SLR preparation efforts, as fiscal resources are more limited at both the state and local levels. However, the state and local governments can undertake some essential near-term preparation activities—such as planning, establishing relationships and forums for regional coordination, and sharing information—with relatively minor upfront investments. For example, neighboring local governments and stakeholder groups could form regional climate adaptation collaborative groups to coordinate how to respond to cross-jurisdictional climate impacts, create efficiencies and economies of scale, and build capacity through shared learning and pooling of resources. The San Francisco Bay Conservation and Development Commission has begun organizing one such effort in the Bay Area region, through its [Bay Adapt](#) regional strategy initiative. Our report, [Preparing for Rising Seas](#), discusses how the state could help facilitate such collaborations, along with other recommendations for how to make progress in mitigating the risks posed by SLR. Given the pending significant risks posed by SLR in the

coming decades—and the additional public safety and economic disruptions that will result absent steps to mitigate potential impacts—the state and its coastal communities cannot afford to defer all preparation efforts until economic conditions

have fully rebounded from the recent crisis. The magnitude of the risks described in this report highlight the importance of California including SLR preparation activities among its many pressing priorities.

LAO PUBLICATIONS

This report was prepared by Rachel Ehlers, and reviewed by Brian Brown and Anthony Simbol. The Legislative Analyst's Office (LAO) is a nonpartisan office that provides fiscal and policy information and advice to the Legislature.

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Public Review Draft

CITY OF SANTA BARBARA SEA-LEVEL RISE ADAPTATION PLAN EXECUTIVE SUMMARY

Prepared for
City of Santa Barbara

February 2020



Funded by:



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EXECUTIVE SUMMARY

INTRODUCTION

The City of Santa Barbara includes approximately six miles of shoreline. Although Santa Barbara has experienced a relatively small amount of sea-level rise to date from climate change, the rate of sea-level rise in the region is expected to accelerate significantly in upcoming years. The purpose of this Adaptation Plan is to identify vulnerabilities to coastal hazards expected from sea-level rise in the city of Santa Barbara and possible actions to prepare for and adapt to sea-level rise.

A vulnerability assessment was prepared for this Adaptation Plan to identify the areas of the city that—in the absence of intervention—are projected to be exposed to sea-level rise and related coastal hazards. This Adaptation Plan provides the framework for the City to monitor sea-level rise impacts and reduce vulnerabilities in phases as specific thresholds for action are reached. A wide range of adaptation options are presented, providing the City flexibility to consider different adaptation strategies over time.

The study area includes portions of the city that are projected to be impacted by coastal hazards through the year 2100, except the Santa Barbara Airport and Goleta Slough, which have been studied separately.

Information surrounding sea-level rise and how to adapt to it is quickly evolving. While the plan provides a framework for decision-making and further study in the mid- and long-term, specific recommendations are focused on the near-term (i.e., the next 10 years). Reevaluation of the plan is recommended to occur at least every 10 years. This Adaptation Plan presents an initial framework for planning for sea-level rise that will continue to evolve over time as conditions change.

SEA-LEVEL RISE VULNERABILITY

The *City of Santa Barbara Sea-level Rise Vulnerability Assessment Update* (Vulnerability Assessment Update) evaluated hazards for three sea-level rise scenarios: 0.8 feet by 2030,¹ 2.5 feet by 2060, and 6.6 feet by 2100.

¹ The 2018 *State of California Sea-Level Rise Guidance* recommends 0.7 feet at 2030. The closest Coastal Storm Modeling System (CoSMoS) Scenario, which has been used to generate maps and conduct vulnerability analyses is 25 cm, which is 0.8 feet. This difference is negligible at the scale of this study, and 0.8 feet at 2030 is used throughout.

The State of California, in the 2018 *State of California Sea-Level Rise Guidance* (OPC 2018), recommends using these precautionary and more risk adverse scenarios when planning for structures, infrastructure, and other development that is not easily moved. The state guidance estimates that these sea-level rise values have a 0.5% chance of being met or exceeded by the year 2100. The state guidance identifies these as the “medium-high risk aversion scenarios” which are based on the assumption that existing levels of greenhouse gas emissions continue and are not significantly reduced (“high emission scenarios”).

The 2018 *State of California Sea-Level Rise Guidance* also includes much more likely scenarios that present sea-level rise values that have a 17% chance of being met or exceeded in the future (“low risk aversion scenarios”) that can be used for planning for adaptable development with few consequences of being impacted (e.g., dirt trails). The state guidance also presents an “extreme risk aversion” scenario called the H++ scenario that is based on recent scientific studies that indicate that there is a possibility that sea levels could rise faster than originally anticipated due to the potential loss of large portions of the West Antarctic Ice Sheet. While the probability of this extreme scenario is not known at this time, the state guidance recommends considering the H++ scenario in the planning of very critical infrastructure (e.g., coastal power plant). For very critical infrastructure, therefore, this Adaptation Plan considers the possibility that 6.6 feet (2100) of sea-level rise may occur sooner, at 2080 rather than 2100, under the extreme H++ sea-level rise scenario. Table ES-1 and Figure ES-1 below present the low-rise, medium-risk, and extreme risk aversion scenarios. All of these aversion scenarios correspond to the high greenhouse gas emissions scenario.

The State of California has updated the sea-level rise projections for the Santa Barbara area contained in the State of California Sea-Level Rise Guidance approximately every five years based on best available information. While there is uncertainty in the timing of sea-level rise in any particular area, the amounts of sea-level rise considered in this Adaptation Plan are expected to occur at some time. Because of the timing uncertainty, this Adaptation Plan provides a framework of planning based on amounts of sea-level rise, rather than when those amounts of sea-level rise will occur.

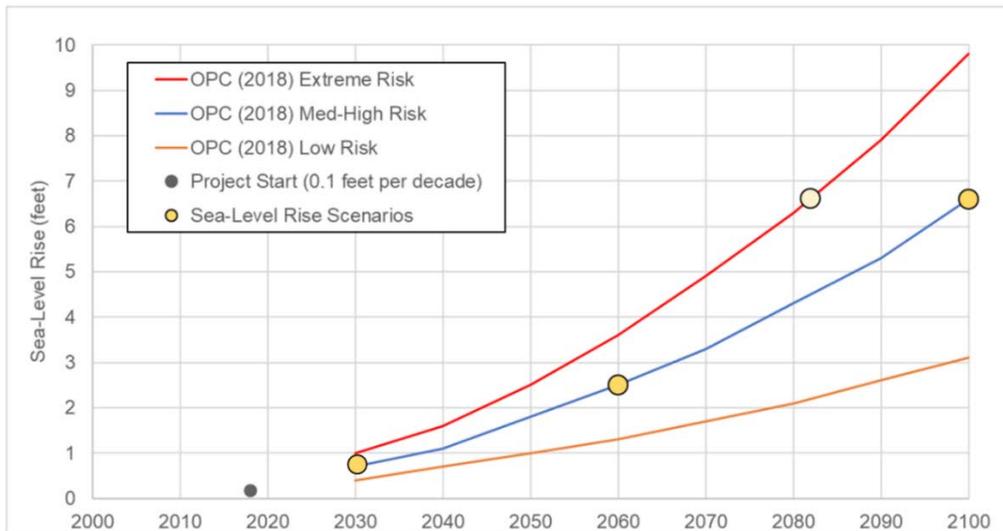
TABLE ES-1
SEA-LEVEL RISE SCENARIOS FOR CITY OF SANTA BARBARA

Scenario	Low Risk Aversion^a <i>17% chance of being met or exceeded</i>	Med-High Risk Aversion <i>0.5% chance of being met or exceeded</i>	Extreme Risk Aversion <i>Unknown probability</i>
0.8 feet of sea-level rise	Occurs by ~2040	Occurs by ~2030	Occurs before 2030
2.5 feet of sea-level rise	Occurs by ~2090	Occurs by 2060	Occurs by 2050
6.6 feet of sea-level rise	Occurs after 2150	Occurs by 2100	Occurs by ~2080

NOTES:

^a Low Risk Aversion values were not used for this analysis

~ Approximately



SOURCE: OPC 2018

Figure ES-1
OPC (2018) Sea-Level Rise Guidance Curves,
with Selected Scenarios

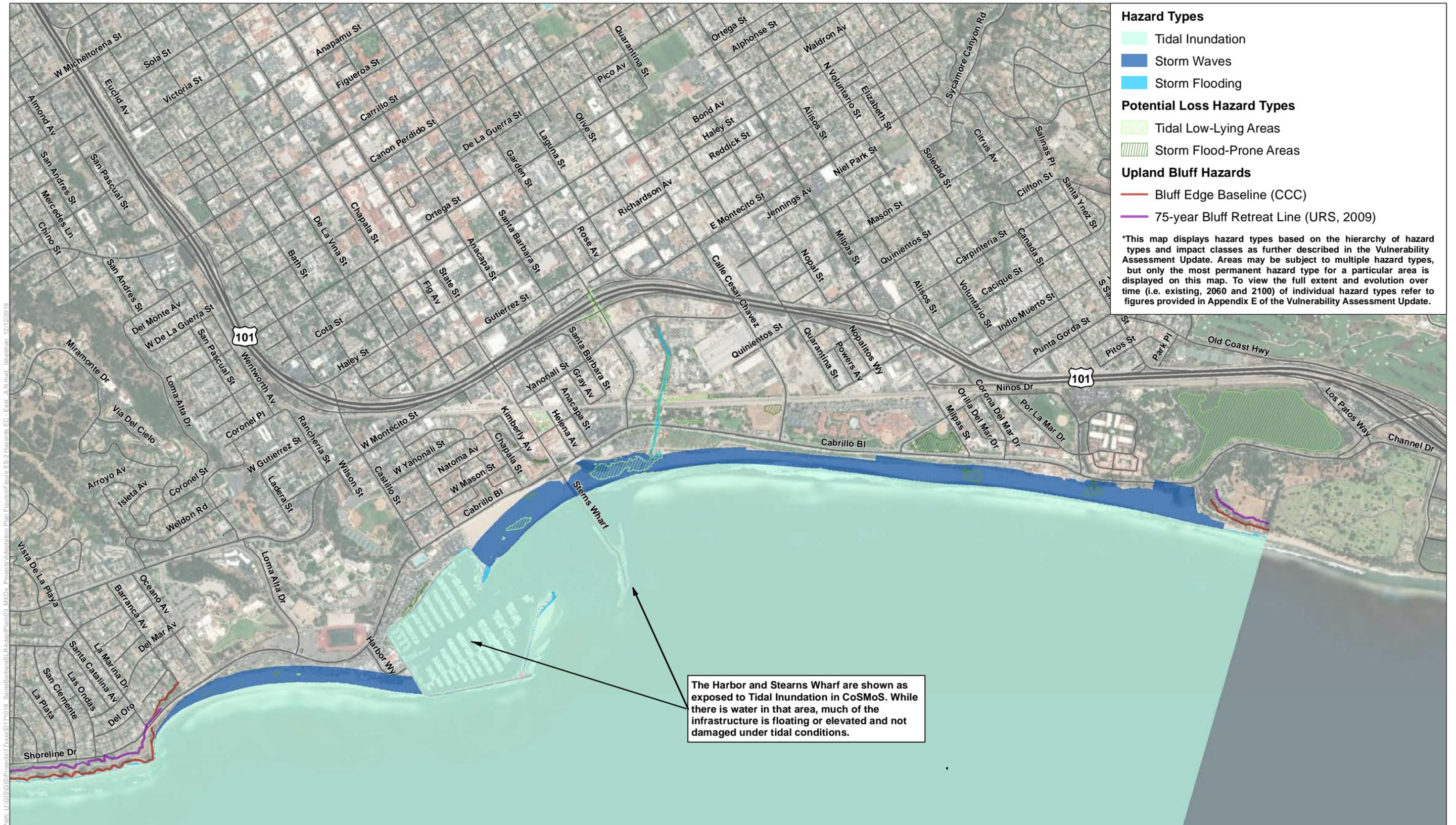
This Adaptation Plan considers potential impacts to public and private assets (e.g., buildings, roads, utilities, parks) from the following hazards:

- Coastal Erosion – permanent loss of sandy beaches, dunes, and the low-lying backshore that occurs with changing sea-level or sand supply.
- Coastal Bluff Erosion – permanent loss of coastal bluffs as material falls or collapses onto the beach or into the ocean below.
- Tidal Inundation – coastal flooding during regular high tides under non-storm conditions.
- Storm Waves – exposure of the coast to large waves generated by local and distant storms.
- Coastal Storm Flooding – high water levels that occur during coastal storm events. The Vulnerability Assessment Update analyzed the “100-year storm” event, which has a 1% chance of occurring each year.

Low-lying areas that may potentially be subject to tidal and storm flooding but are not directly connected to flooding sources were also identified in the Vulnerability Assessment Update. The hazards mapped were developed using the United States Geological Survey (USGS) Coastal Storm Modeling System (CoSMoS), with some data augmented by a regional sea-level rise study called Coastal Resilience Santa Barbara (ESA 2016).

Figures ES-2 through ES-9 illustrate the hazard areas under existing and future sea-level rise scenarios.

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Hazard Types

- Tidal Inundation
- Storm Waves
- Storm Flooding

Potential Loss Hazard Types

- Tidal Low-Lying Areas
- Storm Flood-Prone Areas

Upland Bluff Hazards

- Bluff Edge Baseline (CCC)
- 75-year Bluff Retreat Line (URS, 2009)

*This map displays hazard types based on the hierarchy of hazard types and impact classes as further described in the Vulnerability Assessment Update. Areas may be subject to multiple hazard types, but only the most permanent hazard type for a particular area is displayed on this map. To view the full extent and evolution over time (i.e. existing, 2060 and 2100) of individual hazard types refer to figures provided in Appendix E of the Vulnerability Assessment Update.

The Harbor and Stearns Wharf are shown as exposed to Tidal Inundation in CoSMoS. While there is water in that area, much of the infrastructure is floating or elevated and not damaged under tidal conditions.

SOURCE: ESRI, 2018; USGS, 2018; ESA, 2018.

City of Santa Barbara Sea-Level Rise Adaptation Plan for the LCP Update

Figure ES-2
Existing Conditions Hazards (East)



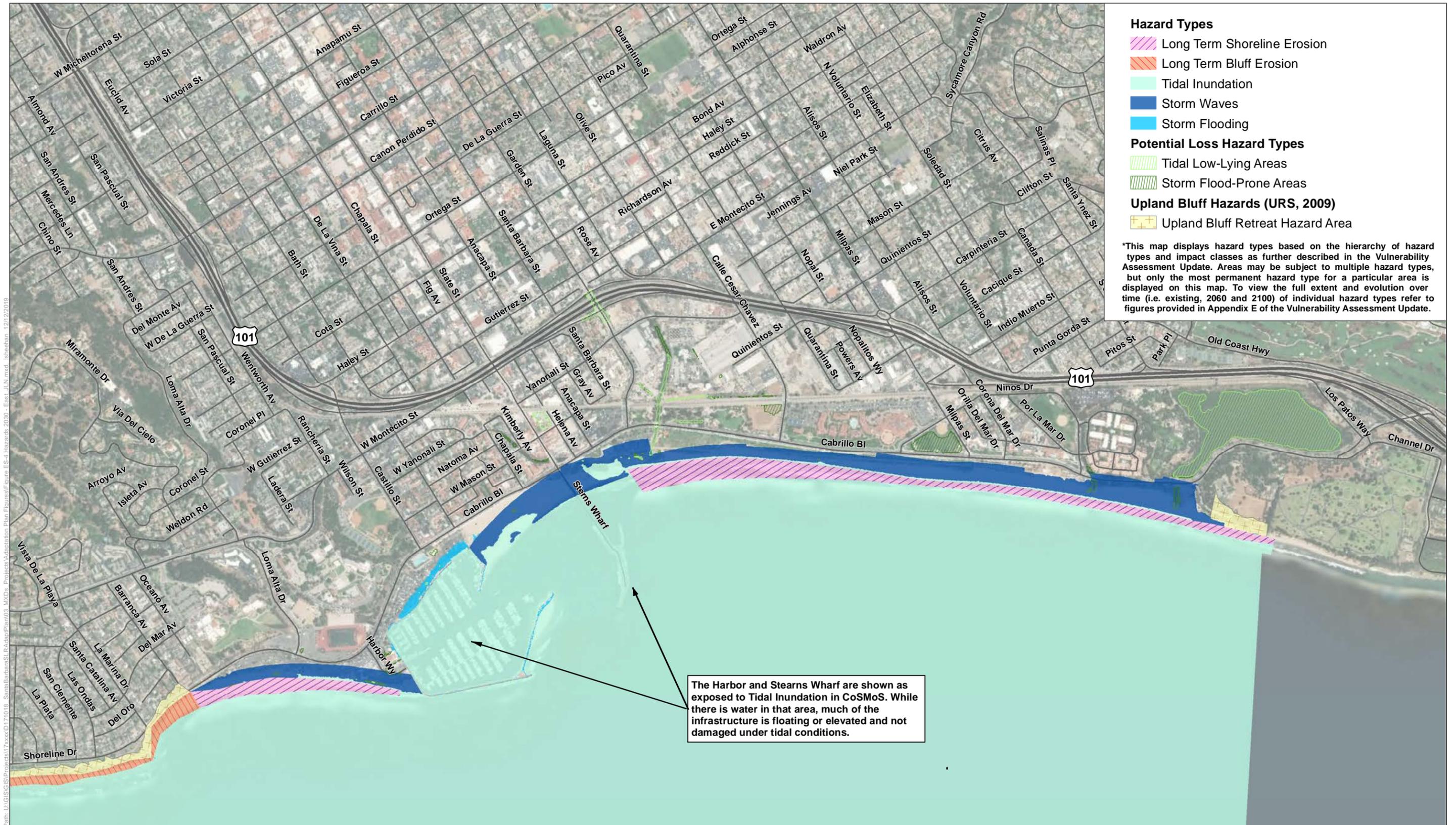


SOURCE: ESRI, 2018; USGS, 2018; ESA, 2018.

City of Santa Barbara Sea-Level Rise Adaptation Plan for the LCP Update

Figure ES-3
Existing Conditions Hazards (West)





SOURCE: ESRI, 2018; USGS, ESA, 2018.

City of Santa Barbara Sea-Level Rise Adaptation Plan for the LCP Update

Figure ES-4
Hazards with 0.8 Feet of Sea-Level Rise (±2030) (East)





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Hazard Types

- Long Term Shoreline Erosion
- Long Term Bluff Erosion
- Tidal Inundation
- Storm Waves
- Storm Flooding

Potential Loss Hazard Types

- Tidal Low-Lying Areas
- Storm Flood-Prone Areas

Upland Bluff Hazards (URS, 2009)

- Upland Bluff Retreat Hazard Area

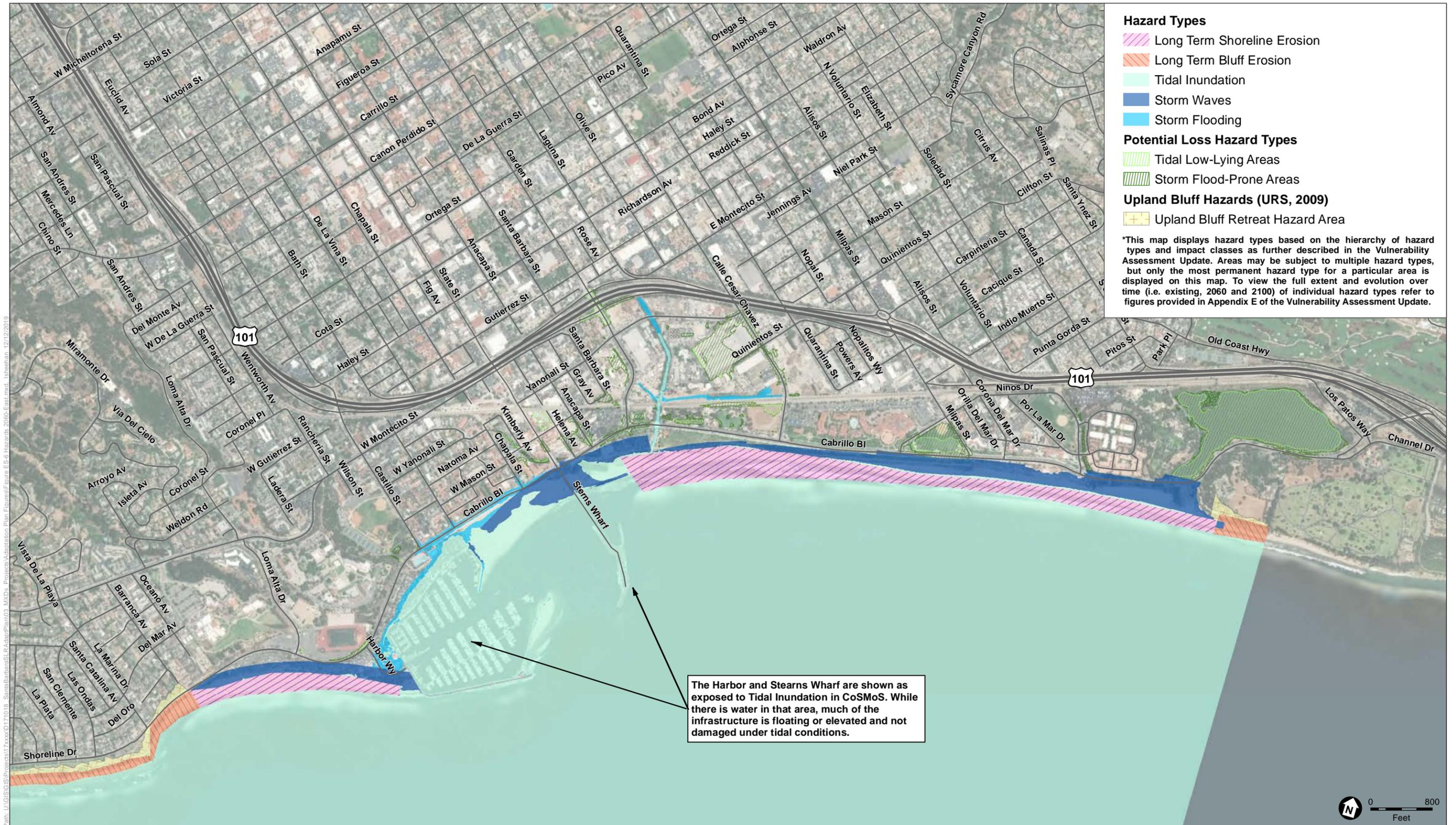
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SOURCE: ESRI, 2018; USGS, 2018; ESA, 2018.

City of Santa Barbara Sea-Level Rise Adaptation Plan for the LCP Update

Figure ES-5
Hazards with 0.8 Feet of Sea-Level Rise (±2030) (West)





Hazard Types

- Long Term Shoreline Erosion
- Long Term Bluff Erosion
- Tidal Inundation
- Storm Waves
- Storm Flooding

Potential Loss Hazard Types

- Tidal Low-Lying Areas
- Storm Flood-Prone Areas

Upland Bluff Hazards (URS, 2009)

- Upland Bluff Retreat Hazard Area

*This map displays hazard types based on the hierarchy of hazard types and impact classes as further described in the Vulnerability Assessment Update. Areas may be subject to multiple hazard types, but only the most permanent hazard type for a particular area is displayed on this map. To view the full extent and evolution over time (i.e. existing, 2060 and 2100) of individual hazard types refer to figures provided in Appendix E of the Vulnerability Assessment Update.

The Harbor and Stearns Wharf are shown as exposed to Tidal Inundation in CoSMoS. While there is water in that area, much of the infrastructure is floating or elevated and not damaged under tidal conditions.



SOURCE: USGS, ESA

City of Santa Barbara Sea-Level Rise Adaptation Plan for the LCP Update

Figure ES-6
Hazards with 2.5 Feet of Sea-Level Rise (±2060) (East)





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- Hazard Types**
- Long Term Shoreline Erosion
 - Long Term Bluff Erosion
 - Tidal Inundation
 - Storm Waves
 - Storm Flooding
- Potential Loss Hazard Types**
- Tidal Low-Lying Areas
 - Storm Flood-Prone Areas
- Upland Bluff Hazards (URS, 2009)**
- Upland Bluff Retreat Hazard Area

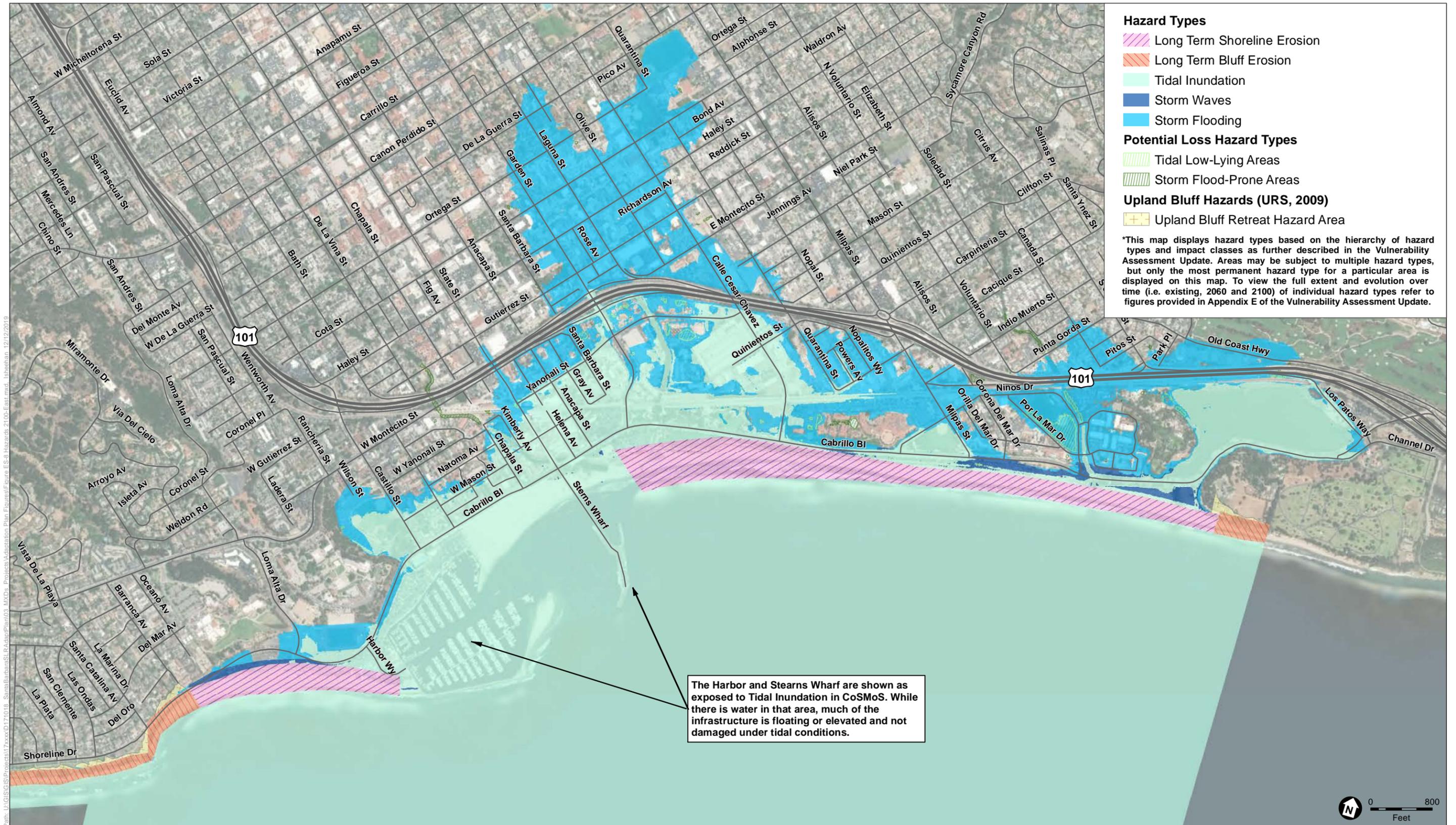
*This map displays hazard types based on the hierarchy of hazard types and impact classes as further described in the Vulnerability Assessment Update. Areas may be subject to multiple hazard types, but only the most permanent hazard type for a particular area is displayed on this map. To view the full extent and evolution over time (i.e. existing, 2060 and 2100) of individual hazard types refer to figures provided in Appendix E of the Vulnerability Assessment Update.

SOURCE: USGS, ESA

City of Santa Barbara Sea-Level Rise Adaptation Plan for the LCP Update

Figure ES-7
Hazards with 2.5 Feet of Sea-Level Rise (±2060) (West)





SOURCE: USGS, ESA

City of Santa Barbara Sea-Level Rise Adaptation Plan for the LCP Update

Figure ES-8
Hazards with 6.6 Feet of Sea-Level Rise (±2100) (East)





Path: U:\GIS\Projects\7xxxx\171018 - Santa Barbara SLR Adaptation Plan\Figures\Figure ES-9 Hazards 2100 West.mxd, lsheman, 12/12/2019

Hazard Types

-  Long Term Shoreline Erosion
-  Long Term Bluff Erosion
-  Tidal Inundation
-  Storm Waves
-  Storm Flooding

Potential Loss Hazard Types

-  Tidal Low-Lying Areas
-  Storm Flood-Prone Areas

Upland Bluff Hazards (URS, 2009)

-  Upland Bluff Retreat Hazard Area

*This map displays hazard types based on the hierarchy of hazard types and impact classes as further described in the Vulnerability Assessment Update. Areas may be subject to multiple hazard types, but only the most permanent hazard type for a particular area is displayed on this map. To view the full extent and evolution over time (i.e. existing, 2060 and 2100) of individual hazard types refer to figures provided in Appendix E of the Vulnerability Assessment Update.

SOURCE: USGS, ESA

City of Santa Barbara Sea-Level Rise Adaptation Plan for the LCP Update

Figure ES-9
Hazards with 6.6 Feet of Sea-Level Rise (±2100) (West)



GUIDING PRINCIPLES FOR ADAPTATION

In 2018, the City's Sea-Level Rise Adaptation Plan Subcommittee, in consultation with City staff, developed the following principles to guide the prioritization and selection of adaptation strategies. These Guiding Principles provide a foundation upon which future project decisions could be made and help in evaluating how well adaptation actions could help meet established community values and expectations:

1. Prioritize:
 - a. Protection of human life, health, and safety
 - b. Critical facilities, public transportation systems, and public services for basic city functions
2. Minimize the impacts of sea-level rise and related hazards to:
 - a. Coastal-dependent development
 - b. Public access to and along the shoreline, beaches, parks, open spaces, and recreation
 - c. Existing development
 - d. The local economy
 - e. Coastal resources
3. Design adaptation strategies that:
 - a. Use best available science and technology
 - b. Are flexible and avoid unnecessarily prescriptive actions to address longer-term hazards
4. Ensure that adaptation strategies:
 - a. Minimize the risks of coastal hazards
 - b. Are legally, technically, and financially feasible
 - c. Are consistent with federal and state laws
 - d. Avoid, where feasible, or minimize impacts to coastal resources
 - e. Do not preclude or prevent implementation of future adaptation strategies to address longer-term hazards
5. Encourage:
 - a. Adaptation strategies that broadly benefit the community
 - b. Equitable sharing of costs and benefits of sea-level rise and related hazards
 - c. Adaptation strategies that have co-benefits, such as greenhouse gas reduction, resiliency to other climate change impacts, habitat protection or creation, creation of new recreation opportunities, improvements to coastal resources, or economic enhancement

ADAPTATION APPROACH

This Adaptation Plan considers three planning horizons which are consistent with the sea-level rise scenarios presented in the Vulnerability Assessment Update:

1. **Near-term:** 0–0.8 feet of sea-level rise (approximately 2020–2030).
2. **Mid-term:** 0.8–2.5 feet of sea-level rise (approximately 2030–2060).
3. **Long-term:** 2.5–6.6 feet of sea-level rise (approximately 2060–2100).

Vulnerabilities and recommendations for adaptation are summarized below by area or resource (**Figure ES-10**) of the city affected. Tables and figures at the end of each section below also summarize the recommendations.



SOURCE: ESA

Figure ES-10
Adaptation Plan Hazard Areas

Coastal Bluff Areas

Coastal bluffs extend along the westerly portion of the city's coastal zone from Sea Ledge Lane to Santa Barbara Point by Leadbetter Beach. There are also coastal bluffs at the far easterly portion of the city by the Bellosguardo Estate. Only a few small portions of the bluff area along the City's shoreline are currently protected by shoreline protection devices. Shoreline protection devices, such as seawalls and rock revetments, are structures along the coast that can provide flood and erosion protection for

properties, but which can result in accelerated erosion of sandy beach areas in front of (seaward) and adjacent to the devices.

Historic coastal bluff erosion rates could increase by 40% with 2.5 feet of sea-level rise and 140% with 6.6 feet of sea-level rise. The increased erosion rates would threaten bluff-top infrastructure, private development, and public development. By 2.5 feet of sea-level rise, bluff erosion is expected to affect properties in the bluff-top residential neighborhoods, infrastructure at Shoreline Park, and portions of Shoreline Drive. By 6.6 feet of sea-level rise, erosion could extend to Shoreline Drive, Cliff Drive, and other bluff-top streets at several locations.

Most of the sandy beaches along the city's westerly coastal bluff areas are likely to be lost from beach erosion by 2.5 feet of sea-level rise.

Recommended near-term actions along the bluffs include the following:

- Closely monitoring beach and bluff erosion.
- Expansion of existing drainage best management practices to reduce the rate of bluff erosion from runoff and irrigation.
- Continuation of current policies that require bluff setbacks for new development and substantial redevelopment and limitations on the use of revetments except to protect essential public services, major public roads, and public beach access stairways.
- Relocation or removal of non-critical assets (e.g., pathways, benches) in Shoreline Park and Douglas Family Preserve.

Beach nourishment and sand retention structures would not preserve the beaches along the bluffs or effectively reduce bluff erosion due to high sediment transport rates offshore. Installation of revetments along the bluffs in the near-term would likely substantially increase the rate of beach loss and limit near-term public access along the beaches. Because of high costs and difficulties associated with permitting, revetments are not recommended unless used to protect major public roads, essential public services, or public beach access stairways.

In the mid-term, public use of many of the bluff-backed beaches will likely be lost to erosion. During the mid-term, the City could consider:

- Use of revetments and slope stabilization on a larger scale to protect Shoreline Drive, Cliff Drive, public access along the top of the bluffs, or a useable portion of Shoreline Park, or
- Removal and relocation of infrastructure, roads, and development.

Additional information and studies will be needed to inform selection of options in the mid and long-term. **Figure ES-11** summarizes the vulnerabilities and adaptation options for the coastal bluff areas.

Coastal Bluff Areas Adaptation Plan Framework

Sea-Level Rise:	0.8' rise (±2030)	2.5' rise (±2060)	6.6' rise (±2100)	
	NEAR-TERM	MID-TERM	LONG-TERM	
Key Vulnerabilities (with no action):	<p>By 0.8' rise:</p> <ul style="list-style-type: none"> • Bluff erosion similar to today • Erosion impacts to: <ul style="list-style-type: none"> » Private Property » Douglas Preserve » Shoreline Park 	<p>By 2.5' rise:</p> <ul style="list-style-type: none"> • Loss of 80% of bluff-backed beaches to erosion • Bluff erosion 40% higher than today • Coastal bluff erosion impacts to: <ul style="list-style-type: none"> » Portions of Shoreline Dr. » Douglas Family Preserve and Shoreline Park » Sewer lines, stormwater drainage pipes, and portions of minor roads » Private parcels 	<p>By 6.6' rise:</p> <ul style="list-style-type: none"> • Loss of nearly all bluff-backed beaches to erosion • Bluff erosion 140% higher than today • Continued coastal bluff erosion impacts: <ul style="list-style-type: none"> » Multiple locations on Shoreline Dr. » Cliff Dr. » Several minor roads » Douglas Family Preserve and Shoreline Park » Sewer lines » Stormwater drainage pipes » Private parcels 	
POTENTIAL ADAPTATION APPROACHES	Options for Near-Term	<p>Monitor beach and bluff erosion</p> <ul style="list-style-type: none"> • Continue regulatory requirements for bluff setbacks factoring in sea-level rise and limits for shoreline protection • Expand drainage best management practices 		
		Plan & Permit	Reconstruct public stairways, shoreline protection for select public assets, and remove select public facilities as needed	
	Additional Options for Mid- to Long-Term	Plan & Permit	Revetments and slope protection for major public roads and public access	Feasibility unknown
		Plan & Permit	Remove or relocate development and reroute roads	

Figure ES-11
Bluff Adaptation Plan Framework

Low-Lying Waterfront and Beach Areas

The low-lying waterfront and beach areas are publicly owned and include Arroyo Burro Beach and the city’s waterfront south of Cabrillo Boulevard spanning from Leadbetter Beach to East Beach.

While the beaches at the waterfront will not experience the same level of loss as the bluff areas, sea-level rise will still cause increased levels of erosion, with East Beach most affected. If no action is taken, storm waves are expected to impact beach parking lots and Cabrillo Pavilion by 0.8 feet of sea-level rise. By 2.5 feet of sea-level rise, impacts from storm waves could extend to Shoreline Boulevard near Leadbetter Beach and Cabrillo Boulevard by Stearns Wharf. At this time, the Boathouse Restaurant at Arroyo Burro Beach could be impacted by erosion and storm flooding. By 6.6 feet of sea-

level rise, tidal inundation could extend along much of Cabrillo Boulevard northward to Highway 101.

In the near-term, it is recommended that the City optimize its existing sand bypassing and study expansion of its beach nourishment and seasonal sand berm programs at East Beach, Leadbetter Beach, and Arroyo Burro Beach. Regardless of any beach nourishment that occurs, the City will need to plan for either the relocation, floodproofing, or protection of major wastewater and water pipelines that are located south of Cabrillo Boulevard and possibly other assets. As public assets in this area are redeveloped, options to avoid hazard areas or mitigation of hazards through elevation of structures or flood walls should be considered.

In the mid and long-term, the City could consider options such as:

- Installation of large-scale shoreline protection devices or levees along the city's waterfront, either by raising Cabrillo Boulevard and Shoreline Drive or by installing a seawall along the waterfront;
- Relocation or removal of waterfront assets;
- Rerouting portions of Shoreline Drive and Cabrillo Boulevard; and
- Installation of groins or artificial reefs if additional studies show them to be feasible and effective.

Additional information and studies will be needed to inform selection of options in the mid- and long-term. **Figure ES-12** summarizes the vulnerabilities and adaptation options for the low-lying waterfront and beach areas.

Low-Lying Flood Areas

The low-lying flood areas are the areas north of Cliff Drive by Arroyo Burro Creek, north of Shoreline Drive by Santa Barbara City College, and north of Cabrillo Boulevard that are projected to be impacted by increased flooding as a result of sea-level rise.

Impacts are projected to be mostly limited to the area seaward of Cabrillo Boulevard, Shoreline Drive, and Cliff Drive with 2.5 feet of sea-level rise. By 6.6 feet of sea-level rise, however, flooding from regular high tides and coastal storms could extend north of Cabrillo Boulevard to Highway 101. Low-lying areas north of Highway 101 that currently flood during extreme storms could see a higher frequency of flooding during large coastal storms.

Low-Lying Waterfront and Beach Areas Adaptation Plan Framework

Sea-Level Rise:	0.8' rise (±2030)	MID-TERM	2.5' rise (±2060)	LONG-TERM	6.6' rise (±2100)	
Key Vulnerabilities (with no action):	By 0.8' rise: <ul style="list-style-type: none"> • Storm wave impacts to: <ul style="list-style-type: none"> » Leadbetter Beach » Cabrillo Pavilion » East Beach Parking Lot » Waterfront Parking Lots » Cabrillo Blvd. between Niños Dr. and Andree Clark Bird Refuge 	By 2.5' rise: <ul style="list-style-type: none"> • Loss of 32% of sandy beaches to erosion • Erosion and regular tidal inundation cause loss of 28% of recreational, open space, and park areas • Storm wave impacts to: <ul style="list-style-type: none"> » Shoreline Blvd. near Leadbetter Beach » Cabrillo Blvd. by Stearns Wharf » Sewer and water supply infrastructure 	By 6.6' rise: <ul style="list-style-type: none"> • Loss of 60% of sandy beaches to erosion • Erosion and regular tidal inundation cause loss of 67% of recreational, open space, and park areas • Tidal inundation impacts to: <ul style="list-style-type: none"> » Area northeast of Cabrillo Blvd. by Harbor and Stearns Wharf » Cabrillo Blvd. » Cabrillo Pavilion » East Beach • Storm wave impacts to: <ul style="list-style-type: none"> » Cliff Dr. and Alan Rd. » Sewer and water supply infrastructure 			
POTENTIAL ADAPTATION APPROACHES	Options for Near-Term	Monitor rising sea-levels, beach erosion, and flooding events.				
		Continue current regulatory practices factoring sea-level rise into project design				
		Continue sand bypassing and beach berm construction				
		Plan & Permit	Expand beach nourishment at East Beach, Leadbetter Beach, and Arroyo Burro Beach			
		Plan & Permit	Relocate, floodproof, or protect sewer lines and other public infrastructure along beaches as needed			
	Additional Options for Mid- to Long-Term	Plan & Permit	Construct groins or artificial reef if additional study shows feasible	Feasibility unknown		
		Plan & Permit	Build seawall or levees along waterfront	Feasibility unknown		
Plan & Permit		Raise Cabrillo Blvd., Shoreline Dr., and/or Cliff Dr., associated roads, and other public infrastructure		Plan & Permit	Remove or relocate development	

Figure ES-12
Low-Lying Waterfront and Beach Adaptation Plan Framework

In the near-term, it is recommended that the City reconstruct and redesign the tide gates and pumps at Laguna Creek. The City could also consider altering floodplain and building regulations to require new and substantially redeveloped buildings to be elevated or floodproofed to higher flood elevations, particularly south of Highway 101.

In the mid- and long-term, the City could consider options such as:

- use of creek floodwalls,
- groundwater pumping,
- continuous seawalls or levees along the waterfront,
- pumping of stormwater,
- elevation and floodproofing of development, and
- removal or relocation of development in tidal inundation areas.

Several additional studies will be needed to inform selection of options in the mid- and long-term. **Figure ES-13** summarizes the vulnerabilities and adaptation options for the low-lying flood areas.

Harbor and Stearns Wharf

By 2.5 feet of sea-level rise, the effects of sea-level rise could impede most Santa Barbara Harbor (Harbor) functions, high tides would exceed marina guide pile heights, and storm waves could significantly impact the Harbor if no action is taken. By 6.6 feet of sea-level rise, the Harbor would be unusable without major reconstruction.

Raising or modifying the Harbor breakwater, rock groin, and sandspit is recommended for the near-term and is the key to any other adaptation measures at the Harbor. The walkway and wall spanning from the breakwater to the Harbor commercial area should be raised or modified at the same time. The City should pursue U.S. Army Corps of Engineers (USACE) funding and assistance with these projects.

Renovation of the marinas and the City Pier (fueling dock) could be done in phases. All the marina piles need to be raised by the time 1 foot of sea-level rise occurs. The City Pier will need to be modified and raised by the time 0.5–1.0 foot of sea-level rise occurs.

At around 0.5 foot of sea-level rise, the City will need to consider how to protect the Harbor commercial area and parking lots. This could begin with raising the walkway or adding walls around the Harbor and along the beachfront. As structures are reconstructed, relocation and/or floodproofing should be considered. In the mid- and long-term, the City could consider options such as continuing to raise seawalls, floodproofing development, raising the grades of the Harbor commercial area and parking lots, or removal or relocation of certain Harbor facilities.

Low-lying Flood Areas Adaptation Plan Framework

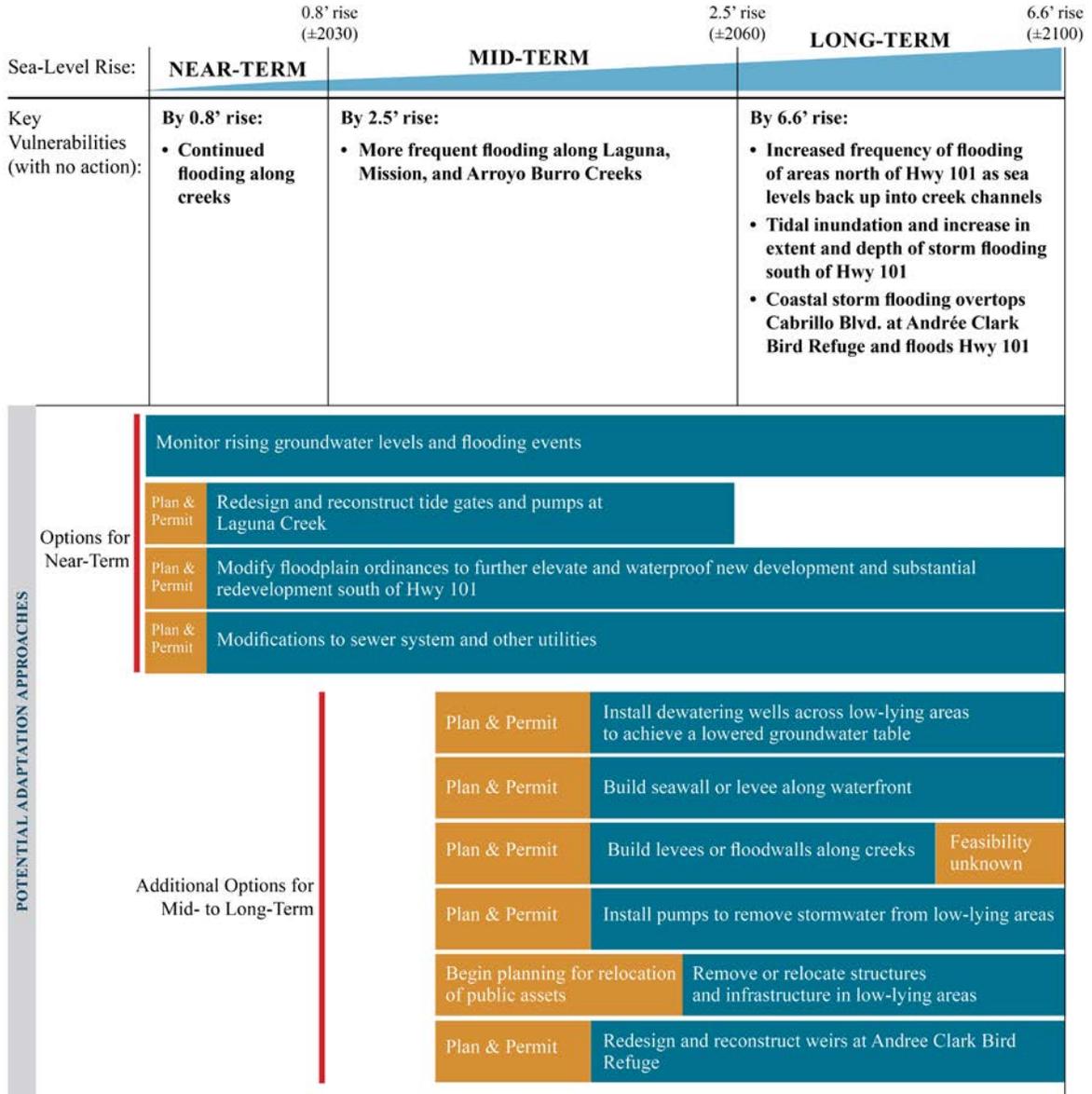


Figure ES-13
Low-Lying Flood Area Adaptation Plan Framework

Stearns Wharf is already at risk for damage under extreme coastal storm events. It is likely that by 2.5 feet of sea-level rise, storm waves would have already significantly damaged the wharf, as currently constructed. In the near-term, the City should initiate further studies to inform either reconstructing, relocating, or removing Stearns Wharf when the hazard impacts become too great. **Figure ES-14** summarizes the vulnerabilities and adaptation options for the Harbor and Stearns Wharf.

Harbor and Stearns Wharf Adaptation Plan Framework

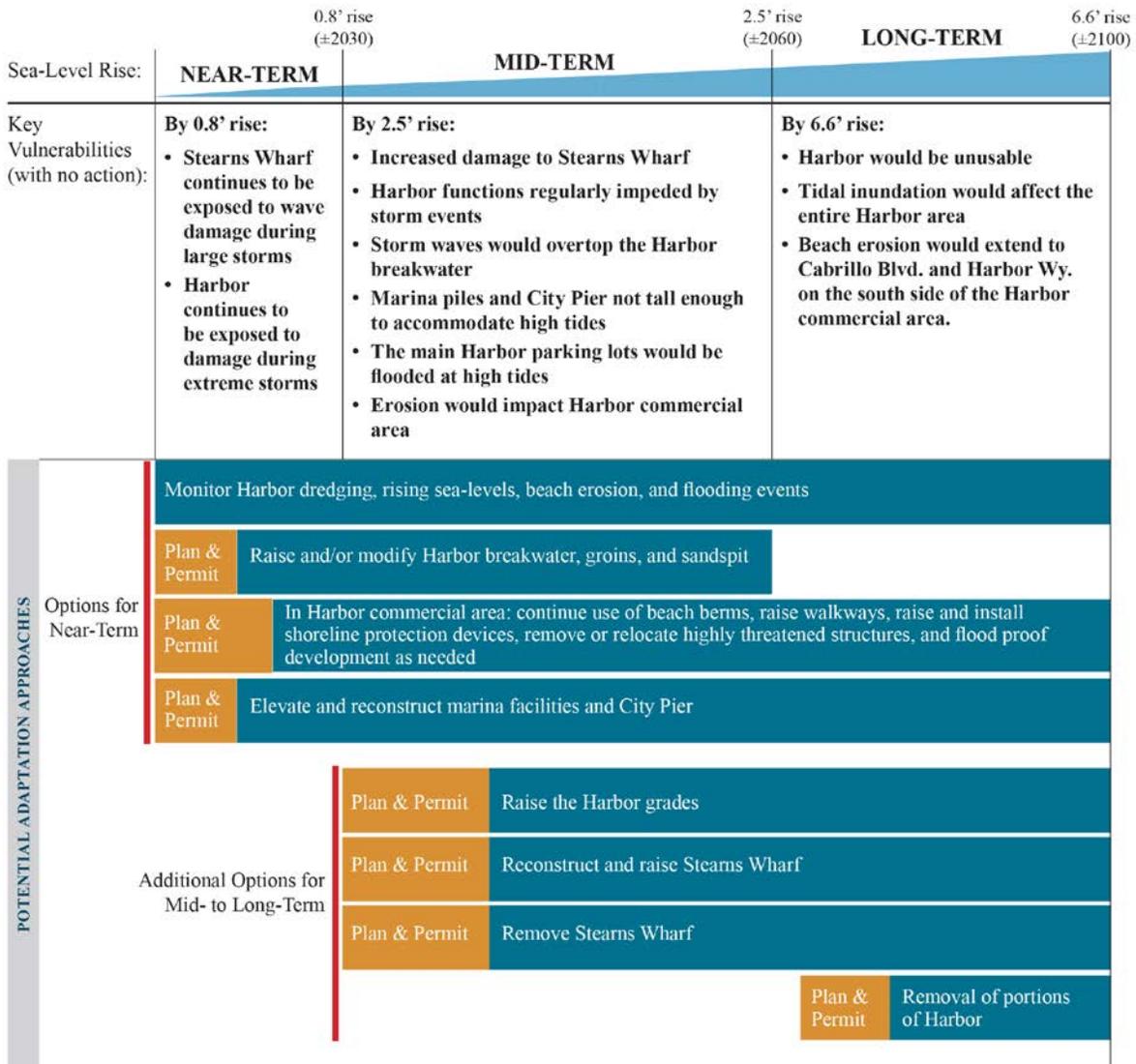


Figure ES-14
Harbor and Stearns Wharf Adaptation Plan Framework

Major Infrastructure

By 2.5 feet of sea-level rise, portions of the wastewater system south of Cabrillo Boulevard could be affected by tidal inundation and storm flooding. If no action is taken, El Estero Water Resource Center would be permanently inoperable as currently designed by 6.6 feet of sea-level rise. This would impact wastewater service and recycled water service for the City's entire service area, including service to inland residential and commercial areas.

While the Vulnerability Assessment Update and this Adaptation Plan contain some information about exposure of the City's wastewater and recycled water systems, it is recommended that, in the near-term, the City initiate a comprehensive study of vulnerabilities and adaptation options for the wastewater, water, recycled water, and stormwater systems. The study should include possible redesign of portions of the systems, possible service point improvements, and options for the El Estero Water Resource Center. In the near-term, the City should also study specific options for relocation and/or floodproofing of major wastewater, water, and utility lines and infrastructure south of Cabrillo Boulevard.

The Charles E. Meyer Desalination Plant is located north of the El Estero Water Resource Center and is not likely to be exposed to increased hazards by 2.5 feet of sea-level rise, but is likely to be exposed to tidal inundation and storm flooding by 6.6 feet of sea-level rise if no action is taken. When the facility is due for major renovations (20–30 years), the City should consider options such as berms and floodwalls, or relocating the facility.

Most major streets in the coastal areas are not likely to be significantly impacted by 2.5 feet of sea-level rise; however, some protection may be needed at select locations along Shoreline Drive and Cabrillo Boulevard. However, by 6.6 feet of sea-level rise, portions of Cabrillo Boulevard, Shoreline Drive, Cliff Drive, and Highway 101 could be impacted by erosion, tidal inundation, or storm flooding if no action is taken. Additionally, the Union Pacific Railroad is projected to be exposed to tidal inundation and storm flooding at multiple locations by 6.6 feet of sea-level rise. Adaptation options for these transportation corridors match with the adaptation options identified for each hazard area they are located in (see above) and include options such as raising roads and the railroad, use of seawalls and revetments, and rerouting of transportation corridors as necessary.

ECONOMIC AND FISCAL IMPACTS

In total, approximately 1,250 parcels could be impacted by increased levels of flooding and erosion with 6.6 feet of sea-level rise. A Benefit-Cost Analysis prepared by AECOM (Appendix B) estimates that if no action is taken to mitigate hazards, the cumulative economic, fiscal, business, and direct property impacts from now through to 6.6 feet of sea-level rise (approximately 2100) could be as much as \$4.1 billion (2018 dollars and values). As analyzed in the Benefit-Cost Analysis, implementing adaptation strategies to protect development in place would result in the avoidance of many of these economic and fiscal impacts, but would also be very costly. In some cases, costs of protection can

outweigh the economic and fiscal impacts avoided. Moving forward, the City will need to be selective in choosing adaptation actions. A key step moving forward with implementation will be prioritizing adaptation actions and closely looking at costs, funding options, and relative benefits of various projects as they are proposed.

NEAR-TERM ACTIONS AND NEXT STEPS

The following are recommended potential near-term (0–0.8 feet of sea-level rise; approximately 10 years) actions to address the hazards associated with sea-level rise. The immediate next step that the City should take is the development of a Five-Year Implementation Plan that prioritizes and further refines these actions and identifies potential costs, funding options, timelines, resources needed, and responsible staff for each action. The Five-Year Implementation Plan should be regularly updated as projects are scoped and undertaken. Reevaluation of the overall Adaptation Plan is then recommended to occur every ten years.

Implementation of adaptation actions will require continuous tracking to measure effectiveness. Changing conditions, changes in best available science, new technologies, new funding sources, and changes in community priorities will necessitate regular reevaluation of appropriate adaptation strategies and, potentially, identification of new strategies. The adaptation strategies discussed in this section have been identified at this time as recommended strategies that the City could potentially seek to implement. The strategies are organized by those relevant to all areas of the city and those relevant to specific hazard areas. Actions that are important to initiate in the next five years are preliminary designated below as “high priority in the next five years.” However, refinement and further prioritization of all of the potential actions will occur as part of the development of the Five-Year Implementation Plan.

Citywide Actions	
High Priority for Next Five Years	<ul style="list-style-type: none"> • Develop and regularly update a Five-Year Implementation Plan that further refines and prioritizes actions and identifies potential costs, funding options, timelines, resources needed, and responsible staff for each action. • Reevaluate the Adaptation Plan at least every 10 years and amend the plan based on changed conditions, changes in best available science, new technologies, new funding sources, and changes in community priorities. • Develop and implement a Shoreline Monitoring Program in coordination with other regional, state, and federal agencies. The program should include: monitoring of sea-level-rise-related hazards; identification of action thresholds; and regular reassessment of the need for implementation actions. • Amend or create City administrative policies, procedures, initiatives, and staffing to implement the Adaptation Plan and ensure consistency in approach for addressing sea-level rise citywide. • Track grant programs and vigorously pursue other funding sources for implementation. • Initiate amendments to update the City’s Local Coastal Program, Hazard Mitigation Plan, General Plan, Climate Action Plan, and the Municipal Code to implement Adaptation Plan policies and to incorporate adaptation to sea-level rise into hazard maps and development standards.

Citywide Actions	
	<ul style="list-style-type: none"> • Incorporate adaptation actions into the City’s Capital Improvement Program. • Engage with the California State Legislature’s office, the Governor’s office, and California State Legislature Representatives on local needs, funding, and legislative changes related to sea-level rise adaptation. • Coordinate with regional, state, and federal agencies on monitoring, joint studies, and implementation of adaptation strategies. • Participate in regional and statewide climate collaboratives. • Maintain a working group composed of key City departmental staff involved in adaptation planning for the City. • Maintain a Sea-Level Rise Subcommittee comprised of members of City council and relevant City advisory bodies and commissions to guide adaptation planning for the City. • Engage with the community and stakeholders during Adaptation Plan and Local Coastal Program updates and implementation of adaptation projects. • Identify funding sources to assist property owners with adaptation. • Continue and expand public education on sea-level rise and adaptation. • Where appropriate, include hazard disclosures and risk indemnifications in conditions of approval for permits and other City documents such as parcel information documents and databases, leases, or service contracts to properties in hazard areas. • Consider amending the City’s legislative platform and working with the State to include information about the hazards related to sea-level rise in real estate disclosures. • Research and monitor case studies, laws, and court cases that may affect implementation of the Adaptation Plan.

Coastal Bluff Areas (see Section 5)	
High Priority for Next Five Years	<ul style="list-style-type: none"> • Monitor beach and bluff erosion (see Shoreline Monitoring Program above). • For new development and substantial redevelopment, continue the current regulatory practice of requiring bluff setbacks that factor in accelerated bluff erosion rates from sea-level rise over time. • Continue the current regulatory practice of limiting the construction of shoreline protection devices where feasible, except when necessary to protect essential public services, major public roads, and public beach access stairways.
Additional Actions	<ul style="list-style-type: none"> • Expand best management practices to reduce the rate of bluff erosion as a result of runoff and irrigation. • Plan for removal, relocation, or, as needed, protection of public assets and natural resources in Shoreline Park and Douglas Family Preserve. • Plan for repairs or replacement of public access beach stairways as needed. • Plan for protection of Shoreline Drive at select locations when erosion levels trigger action. • Further study safe bluff setbacks and trigger distances, which will be used to inform the City on when adaptation measures are needed. • Further study whether slope protection measures along the upper bluff face (gunite, soldier piles, etc.) would be needed in addition to shoreline protection at the base of bluffs to protect major public roads and bluff-top access areas in the mid- and long-term.

Low-Lying Waterfront and Beach Areas (see Section 6)

High Priority for Next Five Years	<ul style="list-style-type: none"> • Monitor rising sea-levels, beach erosion, and flooding events (see Shoreline Monitoring Program above). • Study and implement options to optimize existing sand bypassing and beach berm construction programs at East Beach and Leadbetter Beach. Monitor amounts of bypassed sand regionally. • Study and implement additional beach nourishment, additional seasonal sand protective berms, or formation of dunes at East Beach, Leadbetter Beach, and Arroyo Burro Beach. • Work with the Beach Erosion Authority for Clean Oceans and Nourishment to update the 2009 Coastal Regional Sediment Management Plan to factor in changes associated with sea-level rise. • Continue current regulatory practice of limiting uses in the low-lying waterfront and beach areas and requiring that new development and substantial redevelopment be designed to avoid or mitigate hazards associated with sea-level rise.
Additional Actions	<ul style="list-style-type: none"> • As needed, consider options such as shoreline protection, floodproofing, and removal or relocation of select public facilities as they are redeveloped or become threatened. • Further study specific beach width thresholds for initiating consideration and planning for large-scale adaptation options along the waterfront and beach area.

Low-Lying Flood Areas (see Section 7)

High Priority for Next Five Years	<ul style="list-style-type: none"> • Monitor rising groundwater levels and flooding events (see Shoreline Monitoring Program above). • Redesign and reconstruct the Laguna tide gate and pump system. • Study extreme rainfall runoff and creek discharge flooding in Laguna Channel with climate change and sea-level rise. • Evaluate potential changes to the City's floodplain ordinance in flooding areas impacted by sea-level rise. In particular, consideration should be given to requiring additional floodproofing of new development and substantial redevelopment in the areas south of Highway 101 that could, as a result of sea-level rise through the long-term (6.6 feet of sea-level rise), experience tidal inundation and storm flooding levels that are deeper and more extensive than those currently mapped on FEMA Flood Insurance Rate Maps.
Additional actions	<ul style="list-style-type: none"> • Study changes in flooding as a result of: (1) riverine flood events interacting with higher sea levels and (2) changes in rainfall and riverine flooding due to climate change. Develop monitoring and adaptation thresholds for creek flooding. • Study existing groundwater elevations, the freeboard from typical levels up to a flood threshold, and potential impacts of sea-level rise. Study the feasibility of groundwater pumping to lower the water table. • Further study feasibility of creek floodwalls, tide gates, continuous seawall, levees, or other identified measures to prevent inundation and storm flooding.

Harbor (see Section 8)	
High Priority for Next Five Years	<ul style="list-style-type: none"> Monitor Harbor dredging, rising sea-levels, beach erosion, and flooding events (see Shoreline Monitoring Program above). Raise or modify the Harbor breakwater, rock groin, sandspit, and the walkway and wall spanning from the breakwater to the Harbor commercial area. Pursue Army Corps of Engineers feasibility studies, funding, and assistance with these projects. Renovate marina facilities and the City Pier in phases. All marinas piles need to be raised by the time 1 foot of sea-level rise occurs. The City Pier needs to be modified and/or raised by the time 0.5–1.0 foot of sea-level rise occurs. Continue use of beach berms and consider additional beach or dune nourishment south of the Harbor commercial area. Continue the current regulatory practice of limiting uses in the Harbor and requiring that new development and substantial redevelopment be designed to avoid or mitigate the impacts associated with sea-level rise.
Additional Actions	<ul style="list-style-type: none"> As needed, consider raising existing seawalls, adding new shoreline protection, floodproofing development, and removing or relocating structures as they are either redeveloped or become threatened. At 0.5 foot of sea-level rise, start planning for the protection of the Harbor commercial area and parking lots. This could start with raising the walkway or raising/adding walls around the Harbor and along the beachfront. In the mid-term, options to study could include raising Harbor grades and elevating and floodproofing structures.

Stearns Wharf (see Section 8)	
Additional Actions	<ul style="list-style-type: none"> At 0.5–1.0 foot of sea-level rise, prepare alternatives analysis considering raising, relocating, redesigning, or removing the Wharf. Study should also assess thresholds for initiating actions on Stearns Wharf based on acceptable levels of risk.

Major Infrastructure (see Section 9)	
High Priority for Next Five Years	<ul style="list-style-type: none"> Monitor utility system and transportation system interruptions, rising sea-levels, beach erosion, and flooding events (see Shoreline Monitoring Program above). Study options for relocation and/or flood proofing of major wastewater, water, and utility lines and infrastructure south of Cabrillo Boulevard. Initiate a comprehensive study of adaptation options for threatened portions of the wastewater system, including redesign of portions of the system, adaptation options for El Estero Water Resource Center, and possible service point improvements.
Additional Actions	<ul style="list-style-type: none"> Study the potential impacts to the stormwater system from sea-level rise and possible adaptation options. Study the potential impacts to the water system from sea-level rise and possible adaptation options. Coordinate with electrical and natural gas utility providers to further assess potential impacts and adaptation options for the energy transmission and distribution systems.



A California Joint Powers Agency

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Exhibit 1

September 18, 2020

Melissa Hetrick, Project Planner
Community Development Department
City of Santa Barbara

Sent by Email: SLRPlan@SantaBarbaraCA.gov

RE: BEACON Comments re: City of Santa Barbara's Sea-Level Rise Adaptation Plan

Dear Ms. Hetrick:

BEACON is providing the following comments on the City of Santa Barbara's Draft Sea-Level Rise Adaptation Plan. BEACON applauds the City for taking pro-active steps to address projected climate and sea-level rise impacts in Santa Barbara. Importantly, the draft City Plan identifies several adaptation activities that could potentially benefit by partnering with BEACON, and other regional and state efforts, and by being addressed on a regional level.

This letter specifically addresses the several potential region-level partnership opportunities identified in the draft plan. Potential areas of collaboration include: regional shoreline monitoring; sediment management, beach nourishment, and potential beach berm or dune formation; regional agreement on principles for adaptation; joint grant and funding opportunities; joint studies of case law and adaptation options; and coordinated consultation with state and federal legislators and agencies on regional needs. In addition, the City's Plan identifies that BEACON intends to update its Coastal Regional Sediment Management Plan to incorporate climate and sea-level rise impacts in the near future, and indicates that this may also provide areas of collaboration between the City and BEACON.

BEACON offers specific comments regarding each of these topics below.

Regional Shoreline Monitoring: BEACON has supported several different shoreline monitoring efforts across the region over the past thirty years and currently is involved in long-term efforts to support shoreline monitoring by the USGS of shoreline conditions, and is in the planning stages of other initiatives to support additional physical and ecological shoreline monitoring in the region. BEACON would support and participate in a coordinated regional shoreline monitoring program which would include a variety of condition assessments that would directly support regional SLR adaptation efforts.



BEACON Comment Letter on City of Santa Barbara Draft SLR Adaptation Plan

Sediment management, beach nourishment, and potential beach berm or dune formation: BEACON has a long track record in supporting beach nourishment in the region, and is currently supporting multiple efforts to expand beach nourishment, including 'living shoreline' dune restoration efforts. BEACON is very supportive of expanding beach nourishment efforts in the region, focused on natural infrastructure and so-called living shoreline treatments. Seasonal beach berms also provide avenues to protect coastal recreational resources. BEACON would be interested in partnering with the City of Santa Barbara in these efforts. In the recent past, BEACON supported the development of a Dune Restoration Demonstration Project at East Beach.

Joint grant and funding opportunities: BEACON has partnered with its local agency members several times in the past pursuing joint grant and funding opportunities to support sediment management projects. BEACON would welcome the opportunity to partner with the City on joint grant and funding opportunities where local and regional-level objectives could be successfully met.

Research on SLR Adaptation Law and Policy: BEACON is convening a Science Advisory Committee (SAC), including social science law and policy experts, to advise BEACON on the most up-to-date advances in climate and SLR adaptation law and policy. One of the planned activities of the SAC is to engage local agency managers in a workshop setting to discuss the status of state of the art law and policy addressing SLR adaptation. BEACON intends to include representatives of the City of Santa Barbara in the workshop.

Coordinated consultation with state and federal legislators and agencies on regional needs: Several potential suggested regional-level adaptation actions have been identified in the City plan that would support adaptation in the City of Santa Barbara. These actions may require coordination with state and federal agencies and representatives if they are to be successfully implemented. BEACON would be prepared to join with the City to ensure coordinated consultation with state and federal partners to ensure successful implementation.

Regional agreement on principles for adaptation: The City has adopted a set of adaptation principles that will be guiding adaptation planning and implementation in the City. BEACON is prepared to review these principles and is also prepared to consider a set of regional-level principles for adaptation. Such a set of principles could be very important to the successful implementation of regional-level adaptation actions as they would provide further guidance in the selection and implementation of specific projects.

SLR Update to BEACON's CRSMP: BEACON is currently developing a scope of work and seeking state funding for a SLR Update of its Coastal Regional Sediment Management Plan (CRSMP). This update would assist BEACON and its member agencies, including the City of Santa Barbara, in identifying areas of beach erosion and would identify additional strategies and actions to address short and long-term threats to area recreational beaches.

BEACON welcomes the opportunity to partner with the City in developing regional-level Sea-Level Rise adaptation actions that can benefit regional sediment management and beach and coastal resource



restoration. We hope this letter will be helpful in supporting City efforts to complete SLR adaptation planning and initiate priority implementation actions.

As you further advance your adaptation planning in the City, please feel free to contract BEACON Executive Director Marc Beyeler to explore next step options in developing partnership adaptation opportunities.

Sincerely,

Gregg Hart,
Chair, BEACON Board of Directors

Cc: BEACON Board of Directors
BEACON Executive Director



A California Joint Powers Agency

Member Agencies

Fred Shaw
City of Carpinteria

Kyle Richards
City of Goleta

Carmen Ramirez
City of Oxnard

Steven Gama
City of Port Hueneme

Christy Weir, Vice-Chair
City of San Buenaventura

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STAFF REPORT

Meeting Date: September 18, 2020
Agenda Item: 4A

To: BEACON Board of Directors
From: Program Manager

Date: September 10, 2020

Subject: Santa Barbara Debris Basin Grant Project

RECOMMENDED ACTIONS:

- i. Receive a presentation on status of the Santa Barbara Debris Basin Grant Project;
- ii. Approve, ratify, and authorize the Executive Director to execute Amendment No. 1 to the Grant Agreement with the Ocean Protection Council (OPC) for the Santa Barbara County Debris Basin Removal Project to extend the term through March 30, 2023 and to re-define the scope of the project without a change in the grant amount of \$539,000 (Attachment 1);
- iii. Approve and authorize the Executive Director to execute a Cooperative Agreement with Santa Barbara County for the Santa Barbara County Debris Modification Project, similar to the attached, to provide environmental, design and construction services for an amount not to exceed \$539,000 with a period of performance from October 1, 2020 to March 30, 2023, upon concurrence of legal counsel (Attachment 2).

Item i. PRESENTATION:

Background

The largest natural feeder of sediment to the BEACON coast is from our creeks and rivers. However, this natural process is often obstructed by debris basins. Consequently, as previously presented to the Board, one of BEACON's primary goals is to support projects that enhance the natural sediment transport to our coast. In 2015, BEACON began coordinating with the Flood Control Districts of Santa Barbara and Ventura to discuss the potential for removal or modification of existing debris basins to allow sediment to flow unobstructed to the coast.

Ocean Protection Council Grant

In 2016, BEACON in concert with the Santa Barbara County Flood Control District were successful in securing a grant from the Ocean Protection Council (OPC) in the amount of \$539,000 to contribute to the cost of implementing debris basin removal projects from Rattlesnake and San Ysidro Creeks.



For the two debris basin projects, the Santa Barbara County Flood Control District is the lead agency for environmental review under the California Environmental Quality Act. The Grant was ultimately approved in the Spring of 2017.

January 9, 2019 Debris Flow Event

Following the extensive Thomas Fire in December 2017, on January 9, 2018, a high intensity rainstorm caused massive debris movements and mudslides in Montecito. It is estimated that over one million cubic yards of sediment inundated public and private properties. As debris moved downstream, it filled the existing debris basins and overtopped and damaged the grouted rock dams of the basins. Post event, the debris dams were immediately restored in order to maintain the integrity of the basins. The January 9th Debris Flow Event emphasized the protection that the debris basins provide and the removal of them could no longer be supported by the County Flood Control District, the Santa Barbara Community or the Flood Control Board of Directors (County Board of Supervisors). While the community suffered many losses, more losses would have been realized had the basins not been in place.

Request for Scope Modifications to OPC Grant

As a consequence of the County’s new policy regarding debris basin removal, BEACON and Flood Control Staff requested a scope and schedule change to the approved OPC Grant. The changes in scope and schedule are reflected in the table below:

OPC Grant					
Santa Barbara County/BEACON Debris Basin Improvement and Fish Passage Project					
Approved Grant Scope (2017)			Modifications to Grant Scope and Schedule		
Debris Basin	Scope	Complete construction Date	Debris Basin	Scope	Complete construction Date
Rattlesnake Debris Basin	Basin Removal	December 2018	Cold Springs Debris Basin	Basin Modification	December 2022
San Ysidro Debris Basin	Basin Removal	December 2018	San Ysidro Debris Basin	Basin Modification	December 2022

The key elements of the proposed scope and schedule change to the OPC grant are:

1. Elimination of the Rattlesnake Debris Basin Removal as a project and replace it with a Cold Springs Debris Basin Modification project.
2. Change the scope of projects such that instead of debris basin removals, the two debris basins are modified to stay in place but allow sediment to flow through the basin to downstream. The debris basin modifications would follow the design of the highly successful Gobernador Debris Basin modification project completed in 2008. The modification projects would accommodate fish-passage.
3. Shift the project delivery dates out to December 2020 and December 2022 respectively for the two debris basins.



Project Progress

Santa Barbara County Flood Control is proceeding with the implementation of the Cold Springs Debris Basin Modification project and the San Ysidro Debris Basin Modification project. The status of project delivery is as follows:

- 35% Design completed and under review by permitting agencies.
- Final design scheduled for Fall 2021.
- Construction Summer 2022.

Item ii. Ratification of OPC grant Amendment.

OPC approved Amendment 1 to the OPC Grant in March of 2020 just as we entered the COVID era. At this time, the amendment was executed by Brian Brennan as Executive Director of BEACON. Staff is recommending that the Board ratify the Executive Director's approval of the OPC Grant Amendment 1.

Item iii. Approval of Cooperative Agreement with Santa Barbara County Flood Control District.

When the original OPC grant was approved in 2017, BEACON and the Santa Barbara County Flood Control District entered into a Cooperative Agreement defining the roles and responsibilities for the expenditure of the grant funding and compliance with the grant conditions. Since that time, as discussed above, the scope and schedule of the OPC Grant funded work has changed and the original cooperative Agreement has expired. A new Cooperative Agreement has been drafted and is attached. The attached Cooperative Agreement is still under review by the parties. In the interest of time, Staff is recommending the Board authorize the Executive Director, upon BEACON legal concurrence, to execute the final version of the new Cooperative Agreement.

Attachments

Attachment 1: OPC Amendment 1

Attachment 2: Draft Cooperative Agreement between BEACON and Santa Barbara County for the OPC Grant.

ATTACHMENT 1

Santa Barbara County Debris Basin Modification Project OPC Grant AMENDMENT 1

Exhibit A

STATE OF CALIFORNIA NATURAL RESOURCES AGENCY/OCEAN PROTECTION COUNCIL
GRANT AGREEMENT

The Water Quality, Supply, and Infrastructure Improvement Act of 2014
(Proposition 1)

Grantee Name: Beach Erosion Authority for Clean Ocean and Nourishment

Project Title: Project Title: Santa Barbara County Debris Basin ~~Removal~~
Improvement and Fish Passage Project

Agreement Number: P01-1-06

Budget Summary:

Ocean Protection Council funding: \$539,000

Other funding: \$5,000 (BEACON), ~~\$532,000~~ **\$4,684,530** (Santa Barbara County Flood Control District), **\$139,744 (CDFW Prop 1)**

Total project cost: ~~\$1,076,000~~ **\$5,398,274**

Schedule:

Begin date: ~~January 15, 2017~~ **August 2019**

End date: March 30, ~~2020~~ **2023**

In both San Ysidro and Cold Springs Creeks, the Debris basin dam embankment is the most upstream man-made 100% barrier to steelhead migration. Modification of the dam embankment will allow steelhead access/spawning to upstream habitat that has been blocked for over 50 years.

The upper reaches of these two creeks remain wetted year-round which is very important in these south-coast stream where the lower reaches dry up almost every year. The opportunity for fish to be able to move upstream into these over-summer areas is important for the continued existence of this endangered species.

The modification of the embankment barrier at Cold Springs Debris Basin will allow access to 1.35 miles of steelhead habitat that is rated as Extremely High Quality - the highest quality habitat on the stream. On San Ysidro Creek, modification of the dam embankment will allow access to 1.28 miles of steelhead habitat that is rated as Extremely High Quality, again the highest quality habitat on the stream.

There are no specific plans for a beach nourishment project. The modification of the embankments will simply allow sediment to naturally flow through the system rather than being caught in the basin as it has been for the past 50 years. The first-time sediment from these two basins was taken to any beach for

Exhibit A

disposal was during the emergency in 2019. ALL other instances of basin clean-outs prior to 2019, the sediment was taken out of the system and to upland disposal locations thus depriving the system, and beaches, of the natural sediment transport cycle. The modifications will re-establish the important transport and retention of sediment within the creek and marine systems.

The measurable benefit is steelhead access to 2.63 miles of wetted extremely high-quality steelhead habitat that has been inaccessible for 55 years. The other measurable benefit will be retention of sediment in the system. The retention of the sediment in the system will be hard to perceive from a year to year basis so monitoring for that will be very difficult. With the recent devastation of the 1/9/18 Debris Flow we can expect about a 15-20 years of recovery before we see a stable system. This is difficult to measure but qualitatively we know that sediment input is good and that the basins have interrupted or stopped sediment input since the basins were constructed so having them modified is a win-win situation as their flood protection/debris capturing ability is retained while at the same time allowing for fish passage and sediment delivery.

~~The project will remove man-made debris basins from Rattlesnake and San Ysidro Creeks located in Santa Barbara. In addition, each creek will be restored to their natural profiles and obstructions to natural sediment flow will be removed. The project will contribute to climate change and sea level rise adaptation, mitigating the negative effects of extreme storm events by better managing creek sediment movement and promoting natural sediment supply to the coast. The project will provide multiple benefits including habitat and natural resource restoration, flood management, regional sediment management, and coastal erosion control.~~

The following is a list of performance measure for these project goals:

Rattlesnake **Cold Springs** Creek

- Removal of approximately 600 **500** CY of grouted rock slope protection.
- Excavation of approximately 1,002 **500** CY of native material and placement of approximately 800 CY of sub-streambed material.
- Placement of approximately 600 CY of streambed material **and forcing features for fish passage for along** the restored channel.
- **Placement of approximately 50 CY of structure backfill and pervious material behind retaining walls.**
- **Placement of 260 CY structural concrete and bar reinforcing steel for outlet control structure.**
- **Placement of 150 CY of rock slope protection for engineered fish passage section through outlet control structure.**
- **Placement of approximately 15 CY of concreted rock slope protection for exposed dam slopes**
- **Placement of 325 CY of access road material.**
- Planting of approximately ~~700~~ **1,600** trees/shrubs

Exhibit A

- Removal of approximately 70 linear feet of pipe currently located under the ~~riverbed~~ **dam**

San Ysidro Creek

- Removal of approximately ~~400~~ **500** CY of grouted rock slope protection
- Excavation of approximately ~~1,700~~ **2,500** CY of native material and placement of approximately ~~1,200~~ CY of sub-streambed material.
- Placement of approximately 500 CY of **natural** streambed material **and forcing features for fish passage along** for the restored channel
- **Placement of approximately 60 CY of structure backfill and pervious material behind retaining walls.**
- **Placement of 225 CY of structural concrete with bar reinforcing steel for outlet control structure.**
- **Placement of 260 CY of rock slope protection for engineered fish passage section through outlet control structure.**
- **Placement of approximately 85 CY of concreted rock slope protection for exposed dam slopes**
- **Placement of 250 CY of access road material.**
- Planting of approximately ~~700~~ **1,600** trees/shrubs.
- Removal of approximately 60 linear feet of pipe currently located under the ~~riverbed~~ **dam**.

Task 1. PROJECT MANAGEMENT

1.1 Grant Administration

The Grant will be managed by the BEACON Program Manager. All issues related to administration, project progress, schedule and expenditures/budget will be managed by BEACON Program Manager who will host a bi-weekly project status meeting conference call with the Santa Barbara County Flood Control in order discuss project progress, issues and identify action items. OPC will be invited to participate in the conference calls. BEACON Program Manager will prepare meeting notes and action items and will also maintain the project Schedule (attached).

1.2 Design and Planning Management

The Santa Barbara County Flood Control District will manage the preparation of the Environmental Document Addendum, the design, and securing all permits for the Project. The key personnel from Flood Control will be the Environmental Manager and Engineering Manager. Both these personnel will attend the bi-weekly project status conference call meetings hosted by BEACON (see above). **Design work including development of plans, specifications, geotechnical investigation, topographic survey, structural analysis, and hydrologic analyses will be performed by engineering firms under contract with the Flood**

Exhibit A

Control District. Preparation of a project specific CEQA document will likely be performed by an environmental consultant under contract with the Flood Control District.

1.3 Construction

The construction will go through a public bid process administered by the SB County Flood control District. The successful contractor will be under contract to the Flood Control District. Construction will be overseen by the Flood Control Engineering Manager. During construction, BEACON Program Manager will attend the weekly construction meetings with the Contractor, Flood Control Staff, and a Construction Management consultant. The CM consultant will be selected by the Flood Control District and be under contract to the District. The Resident Engineer will be from the CM consultant firm and will manage the day to day construction activities.

1.4 Restoration

Following construction, restoration planting **will go through a public bid process administered by the SB County Flood control District** be installed by the Flood Control District and managed by the Environmental Manager.

1.5 Monitoring

Environment monitoring will occur during construction and be performed and managed by the SB County Flood Control District Environmental Manager who will participate in the weekly construction meetings to provide updates. Following construction, the SB County Flood Control District Environmental Manager will manage the post project monitoring effort which will focus on restoration.

1.6 Best Practices Manual

Preparation of the Best Practices (BPM) Manual will be performed by BEACON Staff in coordination with the Flood Control District. This overall effort will be managed by BEACON Program Manager.

Task 1 - Project Management

Budget:			
Grant Funded	BEACON	SB Co Flood Control	Total Cost
\$10,000	\$5,000	\$4,000 63,019	\$19,000 78,019
Schedule:			
From:	01/15/2017 08/15/2019	To:	03/30/20 06/30/2023
Deliverables:			
1	Bi-Weekly Project Development Team (PDT) Meeting Notes/Action Items		
2	Updated Project Schedule		
3	Quarterly Progress Reports		
4	Project Completion Report		
Involved Personnel:			

Exhibit A

1	BEACON Program Manager
2	SB County Flood Control Engineering Manager
3	SB County Flood Control Civil Engineer
4	SB County Flood Control Environmental Manager

Task 2. CEQA + PERMITTING

2.1 Secure BO from NMFS and US Army Corps of Engineers Permit (complete)

In 2014 the SB Co Flood Control District received a Biological Opinion (BO) from the National Marine Fisheries (NMFS) for an updated Routine Creek and Debris Basin Maintenance Program. The District finalized the B.O. in 2015 and the ACOE issued the associated Standard Individual Permit (SIP) in May 2016. The Debris Basin Maintenance Program included the potential removal of ~~Rattlesnake~~ **Cold Springs** and San Ysidro creeks Debris Basins.

2.2 Debris Basin Maintenance and Removal Plan (Addendum to Programmatic EIR)

Flood Control will prepare a Debris Basin Maintenance and Removal Plan which will represent an Addendum to the existing Updated Routine Maintenance Program Programmatic EIR (PEIR). A draft document will be distributed for review by interested agencies and public.

Flood Control will oversee development of a project-specific mitigated-negative declaration CEQA document (MND) likely by an environmental firm under contract with the Flood Control District.

2.3 Secure CDFW and RWQCB Permits

SB Co Flood Control will prepare Permit Applications for the CDFW and RWQCB. Comments will be addressed, and permits will be secured by June 2017. The SB County Flood Control District Environmental Manager will lead this effort.

Task 2 – CEQA and Permitting

Budget:			
Grant Funded	BEACON	SB Co Flood Control	Total Cost
\$0	\$0	\$16,000 185,388	\$16,000 185,388
Schedule:			
From:	01/15/2017 08/15/2019	To:	06/28/2017 10/31/2020
Deliverables:			
1	Approved Addendum to PEIR		
2	US Army Corps of Engineers Permit		
3	California Department of Fish and Wildlife Permit		
4	Regional Water Quality Control Board Permit		
Involved Personnel:			

Exhibit A

1	BEACON Program Manager
2	SB County Flood Control Environmental Manager
3	SB County Flood Control Biologist / Planner
4	Environmental Consultant

Task 3. Design

3.1 ~~30~~**35% Design (complete)**

SB CO flood Control will ~~prepare~~ **oversee preparation of a 3035% Design** of the ~~Rattlesnake Cold Springs~~ and San Ysidro Debris Basin ~~Removal Improvement~~ Project and will be used in preparation of the Debris Basin Plan (see Task 2.2 above). The design effort will be led by the Flood Control Engineering Manager **and Civil Engineer** **The design will incorporate findings of the geotechnical investigation, topographic survey, structural analysis, and hydrologic analyses including with fish passage hydraulics.**

3.2 ~~50-65% Design~~

SB CO Flood Control will ~~prepare~~ **oversee preparation of 5065% Design** of the ~~Rattlesnake Cold Springs~~ and San Ysidro Debris Basin ~~Removal Improvement~~ Project. The ~~5065% Design~~ will be reviewed by NMFS and comments addressed. The design effort will be led by the Flood Control Engineering Manager **and Civil Engineer**.

3.3 ~~90~~**95% Design Plans, Specifications and Estimate**

SB CO Flood Control will ~~prepare~~ **oversee preparation of 9095% level Design Plans, Specifications and Estimate** for the ~~Rattlesnake Cold Springs~~ and San Ysidro Debris Basin ~~Removal Improvement~~ Project. The ~~9095% Design~~ will be reviewed by NMFS and comments addressed. Upon completion of the Estimate, the project budget will be modified according. The OPC Prop 1 Grant funding contribution will be kept fixed. The design effort will be led by the Flood Control Engineering Manager **and Civil Engineer**.

3.4 Bid Package

SB CO Flood Control will assemble the Bid Package consisting of Plan, Specifications, Engineers Estimate and Construction Contract Proposal Package. The package will be reviewed through SB CO Public Works protocol including legal review. The design effort will be led by the Flood Control Engineering Manager **and Civil Engineer**.

Task 3 –Design

Budget:				
Grant Funded	BEACON	CDFW – Prop 1	SB Co Flood Control	Total Cost
\$4,000	\$0	\$139,744	\$31,000 522,290	\$35,000 696,034
Schedule:				
From:	01/15/2017 08/15/2019		To:	03/23/2018 04/01/2021

Exhibit A

Deliverables:	
1	30 35 % Design
2	50 65 % Design
3	90 95 % Design Plans Specifications and Estimate
4	Bid Package
Involved Personnel:	
1	BEACON Program Manager
2	SB County Flood Control Engineering Manager
3	SB County Flood Control Civil Engineer
4	SB County Flood Control Environmental Manager
5	Survey (Consultant)
6	Design Engineer (Consultant)

Task 4. Construction**4.1 Advertisement/Bidding**

SB CO Flood Control will advertise the ~~Rattlesnake~~ **Cold Springs** and San Ysidro Debris Basin ~~Removal~~ **Improvement** Project. The Flood Control District will host a pre-bid conference including a field review and will release any Addendums necessary to address questions during bidding. The Flood Control District will manage the bid opening and review the bids for compliance with the provisions of the Contract Proposal. The effort will be managed by Flood Control Engineering Manager.

4.2 Contract Award

Upon approval of the "low bidder" the Flood Control legal will review the Contract Proposal and all required submittals and recommend approval by the County Board of Supervisors. Upon approval of the Construction Contract by the Board of Supervisors, a Notice to Proceed will be submitted to the Contractor to start work.

4.3 Construction

The Construction Contract for the ~~Rattlesnake~~ **Cold Springs** and San Ysidro Debris Basin ~~Removal~~ **Improvement** Project will be administered by the Flood Control District. The Flood Control District will secure the services of a Construction Management Consultant to provide in field construction management services (see Task 5 below).

Task 4 – Construction

Budget:			
Grant Funded	BEACON	SB Co Flood Control	Total Cost
\$414,000	\$0	\$436,000 3,238,615	\$850,000 3,652,615
Schedule:			
Cold Springs - From:	04/02/2018 06/01/2021	To:	12/12/2018 09/30/2021
San Ysidro - From:	08/09/2018 06/01/2022	To:	12/12/2018 09/30/2022
Deliverables:			

Exhibit A

1	Construction
Involved Personnel:	
1	BEACON Program Manager
2	SB County Flood Control Engineering Manager
3	SB County Flood Control Civil Engineer
4	SB County Flood Control Environmental Manager
5	SB County Flood Control Biologist/Planner
6	Construction Contractor (TBD)

Task 5. Construction Management**5.1 Secure Construction Management Consultant**

SB CO Flood Control will secure a Construction Management Consultant to provide field management services for the ~~Rattlesnake~~ **Cold Springs** and San Ysidro Debris Basin ~~Removal~~ **Improvement** Project. Services will include Resident Engineer, Inspection and potential staking (if not performed in-house by the Flood Control District).

5.2 Construction Management

The successful CM Consultant will serve as the direct interface with the Contractor and will provide all required documentation and paperwork including Requests for Information (RFI's) and Construction Change Orders (CCO's) and Claims. The Consultant Resident Engineer will host a weekly Construction Meeting with Contractor, Flood Control Staff and BEACON Staff.

5.3 Construction Staking and Surveying

The Flood Control District or the construction contractor will provide construction staking and surveying during construction in coordination with the CM Consultant. The ~~Rattlesnake~~ **Cold Springs** and San Ysidro Debris Basin ~~Removal~~ **Improvement** Project.

5.4 As Builts

The CM Consultant will provide modification to the Final Design Plans in order to reflect accurate As-Built Plans.

Task 5 – Construction Management

Budget:			
Grant Funded	BEACON	SB Co Flood Control	Total Cost
\$25,000	\$0	\$35,000 361,540	\$90,000 386,540
Schedule:			
Cold Springs - From:	06/04/2018 06/01/2021	To:	01/09/2019 12/01/2021
San Ysidro - From:	06/04/2018 06/01/2022	To:	01/09/2019 12/01/2022
Deliverables:			
1	Construction Close Out Report		
2	As-Built Plans		
Involved Personnel:			

Exhibit A

1	BEACON Program Manager
2	SB County Flood Control Engineering Manager
3	SB County Flood Control Civil Engineer
4	SB County Flood Control Environmental Manager
5	CM Consultant (TBD)

Task 6. Monitoring**6.1 Environmental Monitoring**

SB CO Flood Control will perform environmental monitoring during construction of the Rattlesnake **Cold Springs** and San Ysidro Debris Basin **Removal Improvement** Project. During construction, weekly visits to the construction sites will occur as appropriate. This effort will be managed by Flood Control Environmental Manager.

6.2 Post Project Monitoring

The 5-year post project monitoring will consist of:

- Monitoring plant restoration
- Channel restoration performance
- Photo-monitoring
- Sediment flow estimates
- Length, Width Depth monitoring

The effort will be led by Flood Control's Environmental Manager and Engineering Manager. BEACON Staff will also participate for purposes of preparing the Best Practices Manual.

Task 6 – Monitoring

Budget:			
Grant Funded	BEACON	SB Co Flood Control	Total Cost
\$30,000	\$0	\$15,000 34,388	\$45,000 64,388
Schedule:			
From:	08/09/2018 06/01/2021	To:	03/30/2020 06/30/2026
Deliverables:			
1	Annual Monitoring Reports		
Involved Personnel:			
1	BEACON Program Manager		
2	BEACON Technical Advisor		
2	SB County Flood Control Engineering Manager		
3	SB County Flood Control Civil Engineer		
4	SB County Flood Control Environmental Manager		
5	SB County Flood Control Resources Biologist		
6	SB County Flood Control Environmental Planner		

Exhibit A

Task 7. Restoration

7.1 Install New Plants

7.2 SB CO Flood Control will **procure the services of a revegetation contractor to** install new planting as restoration for the plants removed as a consequence of the construction of the ~~Rattlesnake~~ **Cold Springs** and San Ysidro Debris Basin ~~Removal~~ **Improvement** Project. This work will commence upon completion of debris dam construction work. This effort will be managed by Flood Control Environmental Manager.

7.3 Plant Establishment

A two-year plant establishment period will be implemented. During this time, the Flood Control District's **revelation contractor** will replace restoration planting that has not survived. This effort will be managed by Flood Control Environmental Manager. **It is anticipated that the Plant Establishment Period will span 2 years.**

Task 7 – Restoration

Budget:			
Grant Funded	BEACON	SB Co Flood Control	Total Cost
\$25,000	\$0	\$0,000 269,200	\$25,000 294,200
Schedule:			
From:	01/07/2019 09/30/2021	To:	03/30/2020 03/30/2023
Deliverables:			
1	Restoration Plan		
2	Plant Establishment Report		
Involved Personnel:			
1	SB County Flood Control Environmental Manager		

Task 8. Best Practices Manual

8.1 Identify Key Elements and Prepare Memorandum

Following completion of the ~~90~~**95**% Final Design package, BEACON Staff will review the design of the ~~Rattlesnake~~ **Cold Springs** and San Ysidro Debris Basin ~~Removal~~ **Improvement** Project and formulate the key elements that should be included in the Best Practices Manual for debris basin removal projects. From this effort a Memorandum will be prepared explaining the intended objective and goals of the BMP. This will be reviewed with the Flood Control Staff.

8.2 Prepare BPM Outline

The BEACON Team will prepare an outline for the BMP which will be reviewed with Flood Control Staff. Consensus will be reached on the BMP outline.

8.3 Review Project Construction

Exhibit A

The BEACON Team will observe the Construction of the ~~Rattlesnake~~ **Cold Springs** and San Ysidro Debris Basin ~~Removal~~ **Improvement** Project and take photos.

8.4 Review Available Post Project Monitoring Data

Review available post project monitoring data in terms of sediment transport performance.

8.5 Prepare BPM

The BEACON Team will draft BMP for review. Upon receipt of comments, BEACON will finalize BMP.

Task 8 – Best Practices Manual

Budget:			
Grant Funded	BEACON	SB Co Flood Control	Total Cost
\$30,000	\$0	\$0,000	\$30,000
Schedule:			
From:	01/29/2018 09/01/2020	To:	10/30/2019 10/30/2022
Deliverables:			
1	Best Practices Manual		
Involved Personnel:			
1	SB County Flood Control Environmental Manager		
2	BEACON Program Manager		
3	BEACON Technical Advisor		
4	BEACON Strategy Advisor		
5	SB County Flood Control Engineering Manager		

Task 9. Prop 1 Acknowledgement Sign

9.1 Install Prop 1 Acknowledgement Signs

The construction contract will include as a bid item the preparation and installation of Prop 1 Acknowledgement Signs. The installation of the signs will be placed prior to start of construction and will be placed in locations that are visible to the public and not impacted by construction activities. The signs will remain until completion of construction, **vegetation** restoration and **plant establishment period** monitoring (March 30, ~~2020~~ **2022**).

Task 9 – Prop 1 Acknowledgement Signs

Budget:			
Grant Funded	BEACON	SB Co Flood Control	Total Cost
\$1,000	\$0	\$0,000	\$1,000
Schedule:			
Cold Springs - From:	01/29/2018 05/01/2021	To:	03/30/2020 03/30/2021
San Ysidro - From:	01/29/2018 05/01/2021	To:	03/30/2020 03/30/2022
Deliverables:			

Exhibit A

1	Prop 1 Acknowledgement Signs
Involved Personnel:	
1	SB County Flood Control Environmental Manager
2	BEACON Program Manager
3	SB County Flood Control Engineering Manager

	BUDGET SUMMARY
	BEACON – Santa Barbara County Debris Basin Removal Improvement Project

Tasks Number and Title	OPC - PROP 1 Grant Funding	BEACON	CDFW–PROP 1	SBCFCWCD	TOTAL FUNDING
Task 1: Project Management	\$10,000	\$5,000	\$0	\$4,000 63,109	\$19,000 78,109
Task 2: CEQA + Permitting	\$0	\$0	\$0	\$16,000 185,388	\$16,000 185,388
Task 3: Planning/Design	\$4,000	\$0	\$139,744	\$31,000 522,290	\$35,000 696,034
Task 4: Construction	\$414,000	\$0	\$0	\$436,000 3,238,615	\$850,000 3,652,615
Task 5: Construction Management	\$25,000	\$0	\$0	\$20,000 361,540	\$45,000 386,540
Task 6: Monitoring	\$30,000	\$0	\$0	\$15,000 34,388	\$45,000 64,388
Task 7: Restoration	\$25,000	\$0	\$0	\$0,00 269,200	\$25,000 294,200
Task 8: Best Practices Manual	\$30,000	\$0	\$0	\$0	\$30,000
Task 9: Prop 1 acknowledgment sign	\$1,000	\$0	\$0	\$0	\$1,000
Contingency	\$0	\$0	\$0	\$10,000	\$10,000
Total	\$539,000	\$5,000	\$0	\$532,000 4,684,530	\$1,076,000 5,398,274

;

Billing Rates
BEACON – Santa Barbara County Debris Basin Removal Improvement Project

Agency	Title	Billing Rate
BEACON	Program Manager	\$140/HR
	Technical Advisor	\$140/HR
	Strategy Advisor	\$100/HR
SB County Flood Control District	Engineering Manager	\$156/HR
	Environmental Manager	\$139/HR
	Civil Engineer	\$132/HR

Exhibit A

	Environmental Planner	\$122/HR
	Resources Biologist	\$122/HR

ATTACHMENT 2

Santa Barbara County Debris Basin Modification Project

Draft Cooperative Agreement Between BEACON and
Santa Barbara County for OPC Grant

AGREEMENT

THIS COOPERATIVE AGREEMENT (“Agreement”), ENTERED INTO ON _____,
is between:

The Beach Erosion Authority for Clean Oceans and Nourishment, a Public Agency in the State of California, referred to hereinafter as “BEACON”

and

Santa Barbara County Flood Control and Water Conservation District, a body corporate and political, referred to hereinafter as “DISTRICT”.

RECITALS

1. BEACON is a Public Agency established under the California Joint Exercise of Powers Act representing the coastal interests of the counties of Santa Barbara and Ventura and the coastal cities Goleta, Santa Barbara, Carpinteria, Ventura, Oxnard, and Port Hueneme.
2. One of BEACON’s missions is to enhance the supply of sediment onto beaches within the BEACON jurisdiction. Consequently, BEACON is seeking grants funding for projects that support the delivery of sediment onto beaches within the BEACON jurisdiction
3. The largest source of sediment supply to the coast is from creeks. However, this natural supply of sediment is often obstructed by debris basins constructed in the creeks.
4. Debris basins located in Cold Springs Creek and in San Ysidro Creek, hereinafter referred to as “DEBRIS BASINS”, were constructed by DISTRICT and are owned and maintained by DISTRICT.
5. DISTRICT has determined that the original intent of the DEBRIS BASINS can be optimized to accommodate fish-passage, retain large scale debris and allow sediment transport through the basins.
6. BEACON and DISTRICT mutually agree that modifications to the DEBRIS BASINS will have an overall benefit to the environment and specifically to fish-passage along the Cold Springs and San Ysidro Creeks and to beach nourishment along the Santa Barbara coast.
7. In 2017, BEACON secured grant funding from the State of California – California Resources Agency/Ocean Protection Council (OPC), hereinafter referred to as “GRANT P01-1-06” for natural restoration infrastructure efforts related to the concrete debris dams on Rattlesnake to San Ysidro Creek (Attachment 1).
8. On March 20, 2020, BEACON executed an Amendment #1 to the GRANT P01-1-06 (referred to hereafter as “GRANT P01-1-06 Amendment #1”) to change the project end date from March 30, 2020 to March 30, 2023 and to change the scope of work as described in Attachment 2 to modify the DEBRIS BASINS, hereinafter referred to as “PROJECT.”

BEACON/County of Santa Barbara Cooperative Agreement

Cold Springs and San Ysidro Debris Basins Modification Project

September 2020

SECTION I

BEACON and DISTRICT agree that this Agreement shall amend and replace the Agreement dated May 2, 2017 titled “BEACON/County of Santa Barbara Cooperative Agreement, Rattlesnake and San Ysidro Debris Basins Removal Project”. GRANT P01-1-06 is attached hereto and incorporated herein by this reference as Attachment 1. GRANT P01-1-06 Amendment #1 is attached hereto and incorporated herein by this reference as Attachment 2. Grant Budget and Reimbursement Ratios is attached hereto and incorporated herein by this reference as Attachment 3.

BEACON AGREES:

1. To perform BEACON responsible activities for PROJECT as defined in Attachment 2, Exhibit A Tasks 1, 8 and 9.
2. To administer OPC Grant and monitor compliance with grant provisions.
3. To review invoices received from DISTRICT for work on PROJECT by DISTRICT.
4. Using DISTRICT invoices and BEACON staff invoices, to prepare and submit claims against GRANT P01-1-06 Amendment #1 for reimbursements of work on PROJECT performed by BEACON and DISTRICT.
5. Upon receipt of GRANT P01-1-06 Amendment #1 claim reimbursement funds, to reimburse DISTRICT for invoiced work within 30 days of receiving reimbursement from OPC, less 10% Project Retention held by OPC.
6. Upon completion of PROJECT to submit final GRANT P01-1-06 Amendment #1 claim which will include the 10% Project Retention by OPC.
7. Upon receipt of final GRANT P01-1-06 Amendment #1 claim reimbursement payment, to reimburse DISTRICT within 30 days amount owed to DISTRICT plus any withheld 10% Project Retention.
8. To host PROJECT Team meetings with DISTRICT on a monthly basis and to document action items and maintain PROJECT schedule.
9. To prepare close out report for GRANT at completion of PROJECT.

SECTION II

DISTRICT AGREES:

1. To perform BEACON responsible activities for PROJECT as defined in Attachment 2, Exhibit A Tasks 2, 3, 4, 5, 6 and 7.
2. To prepare and finalize all necessary environmental review under CEQA and secure all permits necessary for the construction of the PROJECT.

3. To prepare design for PROJECT.
4. To construct PROJECT and provide Construction Management services during construction.
5. To provide monitoring during construction and post-construction for PROJECT.
6. To provide post construction restoration plantings for PROJECT.
7. To perform DISTRICT responsible activities for PROJECT as defined in Attachment 2, Exhibit A.
8. To submit monthly invoices to BEACON for work performed on PROJECT in a format acceptable to BEACON. The invoices shall comply with GRANT reimbursement ratios as reflected in Attachment 3 to Agreement, Grant Reimbursement Ratios. The cumulative invoice amounts shall not exceed the PROJECT Task budgets for DISTRICT as defined in Attachment 2, Exhibit A and Attachment 3.
9. To complete DISTRICT Tasks as defined in terms of scope and schedule in Attachment 2.
10. To invite BEACON to PROJECT Team meetings.
11. To procure and maintain for the duration of this Agreement insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the PROJECT work hereunder and the results of that work by the DISTRICT, its agents, representatives, employees or subcontractors. The minimum scope of insurance shall be at least as broad as: (i) Commercial General Liability (CGL): Insurance coverage made on an “occurrence” basis, including products-completed operations, personal & advertising injury, with limits no less than \$2,000,000 per occurrence and \$2,000,000 in the aggregate; (ii) Automobile Liability: covering any auto, including non-owned and hired autos, with limit no less than \$1,000,000 per accident for bodily injury and property damage; (iii) Workers’ Compensation: as required by the California law, with Statutory Limits, and Employer’s Liability Insurance with limit of no less than \$1,000,000 per accident for bodily injury or disease; (iv) Professional Liability (Errors and Omissions) Insurance appropriate to the PROJECT work, with limit of no less than \$2,000,000 per occurrence or claim, \$2,000,000 aggregate; (v) Cyber Liability Insurance: for theft, loss, or unauthorized disclosure of personally identifiable non-public information or third party corporate information that is in the care, custody or control of the insured organization, or an independent contractor that is holding, processing or transferring such information on behalf of the insured organization, provided such theft, loss or unauthorized disclosure covering claims involving privacy violations, information theft, damage to or destruction of electronic information, intentional and/or unintentional release of private information, alteration of electronic information, extortion and network security, with limit of no less than \$1,000,000 per occurrence or claim, \$1,000,000 aggregate.

SECTION III

IT IS MUTUALLY AGREED:

1. Nothing in the provisions of this Agreement are intended to create duties or obligations to or rights in third parties not party to this agreement by imposing any standard of care with respect to the design of roadway projects different from the standard of care imposed by law.
2. DISTRICT agrees to indemnify, defend (with counsel reasonably approved by DISTRICT) and to hold harmless BEACON and its officers, officials, employees, agents and volunteers from and against any and all claims, actions, losses, damages, judgments and/or liabilities arising out of this Agreement from any cause whatsoever, including the acts, errors or omissions of any person or entity and for any costs or expenses (including but not limited to attorneys' fees) incurred by BEACON on account of any claim except where such indemnification is prohibited by law. DISTRICT's indemnification obligation applies to BEACON's active as well as passive negligence but does not apply to BEACON's sole negligence or willful misconduct.
3. **Entire Agreement and Amendment.** No alteration, variation, or amendment of the terms of this Agreement shall be valid unless made in writing and signed by the parties hereto and no oral understanding or agreement not incorporated herein shall be binding on any of the parties hereto.
4. **Termination.** This Agreement shall terminate on June 30, 2023 when the PROJECT is completed and monitoring requirements fulfilled unless extended pursuant to Section III, paragraph 3 of this Agreement.
5. **Severability.** If any provision of this Agreement, or any portion thereof, is found by any court of competent jurisdiction to be unenforceable or invalid for any reason, such provision shall be severable and shall not in any way impair the enforceability of any other provision of this Agreement.
6. **Entirety of Agreement.** This Agreement constitutes the entire Agreement between the parties relating to the specific subject of this Agreement and supersedes all previous agreements, promises, representations, understanding and negotiation, whether written or oral, among the parties with respect to the subject matter hereof.
7. **Survival.** All provisions of this Agreement which by their nature are intended to survive the termination or expiration of the Agreement shall survive such termination or expiration.
8. In the event of conflict between the provisions contained in the numbered sections of this Agreement and the provisions contained in the Exhibits, the provisions of the Exhibits shall prevail over those in the numbered sections.

(Signatures on following page.)

BEACON/County of Santa Barbara Cooperative Agreement

Cold Springs and San Ysidro Debris Basins Modification Project

September 2020

IN WITNESS WHEREOF, the parties hereto have executed this agreement as of the day and year first above written.

BEACON
City of Ventura
501 Poli, Room 120
Ventura, CA 93001

Santa Barbara County Flood Control
District
123 East Anapamu Street
Santa Barbara, CA 93101

By: _____
Chair
BEACON Board

Date: _____

Attest:

By: _____

Approved as to Form
BEACON Legal Counsel

By: _____

By: _____
Chair
Board of Director

Date: _____

Attest:

By: _____

Approved as to Form
MICHAEL C. GHIZZONI
County Counsel

By: _____
Deputy County Counsel

Approved as to Accounting Form
Betsy M. Schaffer, CPA
Auditor-Controller

By: _____

Approved as to Form
Risk Management

By: _____

- Attachment 1. GRANT P01-1-06
- Attachment 2. GRANT P01-1-06 Amendment #1
- Attachment 3. Budget and Reimbursement Ratios



A California Joint Powers Agency

Member Agencies

Fred Shaw
City of Carpinteria

Kyle Richards
City of Goleta

Carmen Ramirez
City of Oxnard

Steven Gama
City of Port Hueneme

Christy Weir, Vice-Chair
City of San Buenaventura

Eric Friedman
City of Santa Barbara

Gregg Hart, Chair
Das Williams
County of Santa Barbara

Steve Bennett
John Zaragoza
County of Ventura

Executive Director
Marc Beyeler

Santa Barbara Address:
105 East Anapamu, Suite 201
Santa Barbara, CA 93101

Ventura Address:
501 Poli St.
P.O. Box 99
Ventura, CA 93001

Email:
Office@Beacon.ca.gov

Website:
<http://www.beacon.ca.gov>

STAFF REPORT

Meeting Date: September 18, 2020
Agenda Item: 5A

To: BEACON Board of Directors
Fr: Executive Director
Date: September 10, 2020
Subject: Board Member Reports



A California Joint Powers Agency

Member Agencies

Fred Shaw
City of Carpinteria

Kyle Richards
City of Goleta

Carmen Ramirez
City of Oxnard

Steven Gama
City of Port Hueneme

Christy Weir, Vice-Chair
City of San Buenaventura

Eric Friedman
City of Santa Barbara

Gregg Hart, Chair
Das Williams
County of Santa Barbara

Steve Bennett
John Zaragoza
County of Ventura

Executive Director
Marc Beyeler

Santa Barbara Address:
105 East Anapamu, Suite 201
Santa Barbara, CA 93101

Ventura Address:
501 Poli St.
P.O. Box 99
Ventura, CA 93001

Email:
Office@Beacon.ca.gov

Website:
<http://www.beacon.ca.gov>

STAFF REPORT

Meeting Date: September 18, 2020
Agenda Item: 5B1

To: BEACON Board of Directors
From: Executive Director

Date: September 11, 2020

Subject: BEACON Science Support

RECOMMENDED ACTIONS:

- i. Receive Staff Report on Science Support Actions;
- ii. Request the Chair to convene a Science Advisory Committee, appoint the initial Co-Chairs and committee members for a term of 2 years; and thereafter, that the Board confirm the appointments made by the Chair;
- iii. Approve Bylaws for the Science Advisory Committee (Exhibit 1);
- iv. Provide notice of cancellation for the agreement with Dr. Doug George for science support services making termination effective October 30, 2020 in accordance Section VI of the agreement; and
- v. Approve and authorize the Executive Director to execute a Cooperative Agreement with the University of California-California Sea Grant in an amount not to exceed \$15,000.00, similar to the attached, to assist BEACON executive staff in coordinating the activities of the Science Advisory Committee with a period of performance from October 30, 2020 through June 30, 2021, upon concurrence of legal counsel (Exhibit 2).

DISCUSSION:

For the past year, BEACON Executive Staff have been working to develop a BEACON Science Strategy and supporting implementation actions. The Board has approved several actions since March 2020 to facilitate implementation. At this time, BEACON staff is recommending the Board authorize the Chair to convene a Science Advisory Committee, appoint the initial Co-Chairs and committee members for a term of 2 years; and thereafter, that that the Board confirm the appointments made by the Chair. In addition, to conform to BEACON's own by-laws, staff is further recommending the Board adopt a set of by-laws for the Science Advisory Committee (Exhibit 1).



Meeting Date: September 18, 2020
Agenda Item: 5B1

To support BEACON Executive Staff in implementation of the Science Advisory Committee, staff is recommending that the Board approve a cooperative agreement with the University of California-California Sea Grant to receive support services for the Science Advisory Committee (Exhibit 2). Originally, Dr. Douglas George was to provide BEACON Executive staff with support for the Science Advisory Committee. While Dr. George, if appointed, will remain one of the two Science Advisory Committee Co-Chairs, Dr. George has taken a position with the National Oceanic and Atmospheric Administration in its West Coast Regional Coastal Planning office and cannot devote the amount of time to supporting BEACON Executive Staff as intended.

BEACON staff have identified the Science staff of the California Sea Grant to support BEACON efforts. The California Sea Grant has proposed that Mr. Nick Sadrpour, the Science Integration Program Coordinator, provide staff support to BEACON. BEACON Executive Staff has worked with Mr. Sadrpour on the California Sediment Management Workgroup for the past three years and collaborated with him on various sediment management activities. Mr. Sadrpour has been assigned to work on additional projects for California Sea Grant in Ventura and Santa Barbara counties working under personnel at the University of California, Santa Barbara. BEACON has a long history of working with the Staff of California Sea Grant located at the Scripps Institution of Oceanography (SIO) at the University of California.

BEACON executive and consultant staff are proposing the initial formation of the group in the fall of 2020 and initial activities as early as the beginning of 2021. In the first two years of the group, BEACON staff are proposing two annual meetings. The first one involves the science advisors only and is focused on a review of relevant data collection and scientific research initiatives of importance to the BEACON Coast. The second meeting would involve the science advisors and local and regional agency managers, where there would be an exchange of information between the scientists and the managers focused on discussing, evaluating, and prioritizing data collection and scientific investigations of most relevance to BEACON's mission.

EXHIBIT 1

Bylaws for the Science Advisory Committee



BYLAWS FOR SCIENCE ADVISORY COMMITTEE

(Adopted by the BEACON Board, September 18, 2020)

1.0 FUNCTION

The Science Advisory Committee (SAC) is a standing advisory committee, which provides professional technical science advice and recommendations to the policy making Board of Directors of the Beach Erosion Authority for Clean Oceans and Nourishment (BEACON) on issues related to:

- Reviewing relevant data collection and scientific research initiatives of importance to beaches within BEACON's jurisdiction;
- Discussing, evaluating, and prioritizing of data collection and scientific investigations of most relevance to BEACON's mission and that BEACON could support;
- Identifying of science support resources;
- Developing ways to better integrate science into BEACON's policy and decision-making;
- Collaborating with academic and agency partners on new science initiatives;
- Providing up-to-date science data and research results to regional and local program managers; and
- Where needed and appropriate, providing scientific advice on new BEACON projects or identifying scientific expertise to be consulted on project evaluations.

2.0 REPRESENTATION & TERM

The Chair of the BEACON Board of Directors shall have the authority to appoint Co-Chairs and committee members with confirmation of the appointments made by the Board of Directors. (Bylaws, Art. IV.A.) Membership of SAC shall consist of twelve (12) members that are experienced scientific personnel encompassing physical, ecological, and social science disciplines focused on coastal and ocean topics from academic, public, and private organizations. SAC members shall have specific knowledge and expertise in the following scientific and technical areas, including:

- Geomorphology;
- Hydrology;
- Geology;
- Biology;
- Beach Ecology;
- Oceanography;
- Coastal Engineering;
- Coastal Economics;
- Coastal and Ocean Law and Policy;

- Social Ecology;
- Political Science; and
- Sociology.

Each designated SAC member shall serve for a two-year term, or if applicable, at the will and pleasure of their appointing authority. SAC members may re-appointed to additional terms without limitation.

BEACON consultant staff shall provide support for SAC including scheduling of meeting locations, preparing and distributing agendas and meeting materials, and taking meeting minutes.

3.0 VOTING

Each voting member shall be entitled to one vote. (Bylaws, Art. IV § D.) Only voting members or their alternates who are present at the meeting may make a motion, second a motion, or vote upon a motion under consideration by SAC. A motion shall pass if approved by a simple majority of the members present at the meeting unless otherwise required.

Ex-officio members may not vote. (Bylaws, Art. IV § D.) Ex-officio members may not make a motion, second a motion or vote upon any motion under consideration by SAC.

BEACON Executive or consultant staff may present recommended board actions to SAC to receive the committee's professional advice and input. SAC may recommend approval of BEACON Executive or consultant staff recommendations or may formulate and approve its own recommendations and shall not be bound by those presented by BEACON Executive or consultant staff. BEACON Executive or consultant staff shall report to the BEACON Board of Directors on recommendations adopted by SAC.

4.0 QUORUM

All decisions by a committee shall be by simple majority of the quorum (5 of 8 members). (Bylaws, Art. V, § 1.) A quorum shall be two-thirds of the committee members (8 of 12 members). A quorum shall be required for the conduct of any business of the SAC. (Bylaws, Art. V, § 1.) No business shall be conducted by a committee without a quorum. (Bylaws, Art. V, § 1.)

5.0 OFFICERS

Officers of SAC shall include two Co-Chairs. After the initial term, SAC members may elect officers by a majority vote of a simple majority of the quorum (5 of 8 members).

6.0 REPRESENTATION AT BEACON BOARD MEETINGS

Either Co-Chair will attend Board meetings to represent the SAC as may be needed to facilitate Board discussion on issues germane to SAC's advisory role.

7.0 MEETINGS

Meetings of SAC shall be held at least once annually. In addition, once a year the SAC shall participate in a workshop with member agency department managers (public works and planning) to discuss scientific, and related management and policy, issues of importance to BEACON's mission. At the discretion of either Co-Chairs, meetings may be rescheduled or cancelled. At the request of either Co-Chair additional meetings may be scheduled.

Meetings shall be conducted in compliance with the Ralph M. Brown Act as amended. (Gov. Code §§ 54950 *et seq.*)

8.0 BYLAW ADOPTION AND AMENDMENTS

A two-thirds majority of the BEACON Board of Directors shall be required to adopt these bylaws and any amendments to these bylaws. SAC may recommend bylaw amendments to the BEACON Board of Directors.

EXHIBIT 2

Cooperative Agreement with the University of California-
California Sea Grant

AGREEMENT

THIS AGREEMENT, ENTERED INTO ON October 30, 2020 is between:

Beach Erosion Authority for Clean Oceans and Nourishment, a joint powers authority, referred to herein as "BEACON",

And

University of California Sea Grant, referred to herein as "CA Sea Grant".

GENERAL

	Requesting Agency	Servicing Agency
Agency/Institution	BEACON	The Regents of the University of California, University of California San Diego/Santa Barbara
Department	NA	California Sea Grant
Address	501 Poli Street PO Box 99 Ventura, CA 93001	9500 Gilman Drive, 0210 La Jolla, CA 92093-0210
Project Coordinator	Marc Beyeler	Nick Sadrpour
Telephone	510-316-6095	858-246-5269
Email	Beyeler@Beacon.ca.gov	nsadrpour@ucsd.edu
Billing Contact	Gerald Comati	Nick Sadrpour
Address	BEACON 501 Poli Street P O Box 99 Ventura, CA 93001	9500 Gilman Drive, 0954 La Jolla, CA 92093-0954
Telephone	805 962-0488	858-246-5269
Email	comati@beacon.ca.gov	nsadrpour@ucsd.edu
Fed Id Number	77-0557953	95-6006144

RECITALS

- (1) The Beach Erosion Authority for Clean Oceans and Nourishment (BEACON) is a California Public Agency established under the California Joint Exercise of Powers Act representing the Counties of Santa Barbara and Ventura as well as the Cities of Santa Barbara, Carpinteria, Ventura, Oxnard and Port Hueneme. Statutory authority for BEACON is through California Government Code Section 6500 *et seq.* The agency is dedicated to the protection and nourishment of beaches within the jurisdictions it represents.
- (2) BEACON requires professional assistance to manage a BEACON Science Advisory Committee (SAC) as part of its operations in order to provide the best available science to inform its policies, programs, and projects (referred to as "Assistance").

-
- (3) BEACON is willing to fund CA Sea Grant to provide this Assistance.
 - (4) CA Sea Grant is willing to provide this Assistance.
 - (5) The parties hereto desire to define the terms and conditions under which Assistance will be implemented and financed.

SECTION I

BEACON AGREES:

- (1) To provide contract administration services for Assistance to be performed by CA Sea Grant.
- (2) To assign a BEACON Project Coordinator to coordinate Assistance.
- (4) To attend coordination meetings and teleconferences with CA Sea Grant and the SAC Co-Chairs to coordinate Assistance, and to address any other issues, deadlines or events that may impact schedule to perform the required Assistance.
- (5) To reimburse CA Sea Grant within ninety days of receipt of invoices.

SECTION II

CA Sea Grant AGREES:

- (1) To provide the Assistance in accordance with Duties shown in Exhibit A, attached hereto and incorporated by this reference.
- (2) To provide the Assistance in accordance with the SCHEDULE shown in Exhibit A, attached hereto and incorporated by this reference.
- (3) To provide the Assistance in accordance with BUDGET shown in Exhibit A, attached hereto and incorporated by this reference.
- (4) To assign a CA Sea Grant Project Coordinator to provide the Assistance.
- (5) To submit to BEACON, at the address listed under "Billing Contact Address" of the GENERAL section above, monthly invoices. Monthly invoice shall include the following information:
 1. Invoice Date.
 2. Work period that invoice covers.
 3. Description of work completed during invoice period will be submitted monthly to BEACON by email.
 4. A list of labor hours billed with name of billing individual, billing rate, quantity of hours billed and dollar amount for each.
 5. A line item that includes dollar amount of overhead applied to invoice.
 6. A total dollar amount of invoice which summarizes all the items above.
 7. A cost summary indicating current billed amount by cost category and cumulative amount billed.

-
- (6) To attend coordination meetings and teleconferences with CA Sea Grant and the SAC Co-Chairs to coordinate the Assistance, and to address any other issues, deadlines or events that may impact the schedule to perform the required Assistance.
 - (7) To obtain concurrence in writing from BEACON on changes duties, cost, or schedule.

SECTION III

IT IS MUTUALLY AGREED AS FOLLOWS:

- (1) In lieu of and notwithstanding the pro rata risk allocation which might otherwise be imposed between the parties pursuant to California Government Code Section 895.6, the parties agree that all losses or liabilities incurred by a party shall not be shared pro rata but instead all parties agree that pursuant to California Government Code Section 895.4, each of the parties hereto shall fully indemnify and hold each of the other parties, their officers, board members, employees and agents, harmless from any claim, expense or cost, damage or liability imposed for injury (as defined by California Government Code Section 810.8) occurring by reason of the negligent acts or omissions or willful misconduct of the indemnifying party, its officers, board members, employees or agents, under or in connection with or arising out of any work, authority or jurisdiction delegated to such party under this agreement. No party, nor any officer, board member, employee or agent thereof shall be responsible for any damage or liability occurring by reason of the negligent acts or omissions or willful misconduct of other parties hereto, their officers, board members, employees or agents, under or in connection with or arising out of any work, authority or jurisdiction delegated to such other parties under this agreement.
- (2) No alteration or variation of the terms of this agreement shall be valid unless made in writing and signed by the parties hereto and no oral understanding or agreement not incorporated herein shall be binding on any of the parties hereto.
- (3) BEACON reserves the right to terminate this agreement upon fifteen days written notice to CA Sea Grant. At the time of termination, BEACON agrees to pay CA Sea Grant for work accomplished at time of termination and delivered in accordance with the terms of this agreement and non-cancelable obligations. All documents, including raw data and draft plans, prepared up to the time of termination shall become property of BEACON.
- (4) This agreement shall begin October 30, 2020 and terminate on June 30, 2021 unless earlier terminated or otherwise agreed.
- (5) That this agreement shall not become binding unless appropriately signed by an authorized official from each agency and that work shall not proceed until such authorizing signatures have been affixed.
- (6) That all subsequent correspondence regarding this agreement have this agreement's number conspicuously affixed there upon and that the Agreement Number is _____.

-
- (7) That any dispute regarding the terms of this a agreement, the performance of any party hereunder, or any other matter related hereto shall be resolved by binding arbitration to be held in Santa Barbara, California under the auspices and pursuant to the applicable rules of the American Arbitration Association.
 - (8) If any provision of this agreement, or any portion thereof, is found by any court of competent jurisdiction to be unenforceable or invalid for any reason, such provision shall be severable and shall not in any way impair the enforceability of any other provision of this agreement.
 - (9) That modification within the scope of this agreement shall be made by mutual consent of the parties by issuance of a written modification, signed and dated by both parties, prior to any changes being performed. The parties are not obligated to fund any changes not approved in advance.
 - (10) The parties shall keep such business records pursuant to this agreement as would be kept by a reasonably prudent practitioner and shall maintain such records for at least four (4) years following the termination of this Agreement. All accounting records shall be kept in accordance with generally accepted accounting principles. BEACON shall have the right to audit and review all such documents and records at any time during CA Sea Grant's regular business hours or upon reasonable notice. In addition, if this agreement exceeds ten thousand dollars (\$10,000.00), CA Sea Grant shall be subject to the examination and audit of the California State Auditor, at the request of the BEACON or as part of any audit of BEACON, for a period of three (3) years after final payment under the Agreement (Cal. Govt. Code Section 8546.7). CA Sea Grant shall participate in any audits and reviews, whether by BEACON or the State, at no charge to BEACON.
 - (11) No remedy herein conferred upon or reserved to BEACON is intended to be exclusive of any other remedy or remedies, and each and every such remedy, to the extent permitted by law, shall be cumulative and in addition to any other remedy given hereunder or now or hereafter existing at law or in equity or otherwise.
 - (12) This agreement may be executed in any number of counterparts and each of such counterparts shall for all purposes be deemed to be an original; and all such counterparts, or as many of them as the parties shall preserve undestroyed, shall together constitute one and the same instrument.
 - (13) All provisions of this agreement which by their nature are intended to survive the termination or expiration of this agreement shall survive such termination or expiration.

IN WITNESS WHEREOF, the parties hereto have executed this agreement as of the day and year first above written.

University of California Sea Grant

BEACON

By: _____
Name: _____
Title: _____

By: _____
Name: Marc Beyeler
Title: Executive Director

Date: _____

Date: _____

Attest:

Approved as to Form and Procedure:

Michael C. Ghizzoni

County Counsel

By:

Deputy County Counsel on behalf of

BEACON

Exhibit A
Work Tasks, Budget, and Schedule

Work Tasks

1. Assist in developing agendas for teleconference planning calls with BEACON Executive Staff
2. Participate in teleconference planning calls with BEACON Executive Staff and SAC Co-Chairs
3. Provide support to BEACON Executive Staff and Co-Chairs in Recruitment and Selection of initial SAC members
4. Assist in preparing agenda for meetings of the SAC
5. Assist in coordinating annual meeting of the Science Advisory Committee
6. Prepare minutes for meeting of the SAC
7. Assist in preparing agenda for SAC-Managers Workshop
8. Assist in coordinating Science Advisory Committee-Managers Annual Workshop
9. Prepare minutes for meetings of the SAC-Managers Annual Workshop
10. Support BEACON Executive Staff in preparing annual work plan document and Report to the BEACON Board of Directors

Budget

For CA Sea Grant services to be rendered under this agreement Sea Grant shall be paid a total contract amount, including cost reimbursements, up to but not to exceed \$15,000.00.

Payment for services and /or reimbursement of costs shall be made upon CA Sea Grant's satisfactory performance, based upon the scope and methodology contained in the agreement and Work Tasks as determined by BEACON. Payment for services and/or reimbursement of costs shall be based upon the costs, expenses, overhead charges and hourly rates for personnel.

BEACON's failure to discover or object to any unsatisfactory work or billings prior to payment will not constitute a waiver of BEACON's right to require CA Sea Grant to correct such work or billings or seek any other legal remedy.

BEACON shall reimburse Contractor for expenses related to the performance of services described in this agreement. BEACON shall approve any changes to the approved budget in writing through an Amendment to this Agreement. The budget for the above Work Tasks shall be up to \$15,000 (Fifteen thousand dollars) billed on an hourly basis, including administrative overhead costs.

Any necessary travel costs will be reimbursed at actual cost. Travel must be approved by BEACON in advance. Travel costs shall be limited to \$250.00.

Schedule

Fall 2020-Spring 2021	Planning calls with BEACON Executive Staff and Co-Chairs
Fall-Winter 20-21	Recruitment and Selection of SAC Members
Winter 2021	Annual SAC Meeting
Spring 2021	SAC-Managers Workshop
Spring-Summer 21	Review Work Plan and BEACON Board of Directors Report



A California Joint Powers Agency

Member Agencies

Fred Shaw
City of Carpinteria

Kyle Richards
City of Goleta

Carmen Ramirez
City of Oxnard

Steven Gama
City of Port Hueneme

Christy Weir, Vice-Chair
City of San Buenaventura

Eric Friedman
City of Santa Barbara

Gregg Hart, Chair
Das Williams
County of Santa Barbara

Steve Bennett
John Zaragoza
County of Ventura

Executive Director
Marc Beyeler

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STAFF REPORT

Meeting Date: September 18, 2020
Agenda Item: 5B2

To: BEACON Board of Directors
From: Executive Director

Date: September 9, 2020

Subject: BEACON Purchasing Policy

RECOMMENDATION:

- i. Approve and adopt a BEACON Purchasing Policy (Exhibit 1); and
- ii. Adopt Resolution 2020-1 designating the Executive Director to act as BEACON's Purchasing Officer in accordance with the BEACON Purchasing Policy. (Exhibit 2).

DISCUSSION:

The Executive Director will provide an oral presentation.

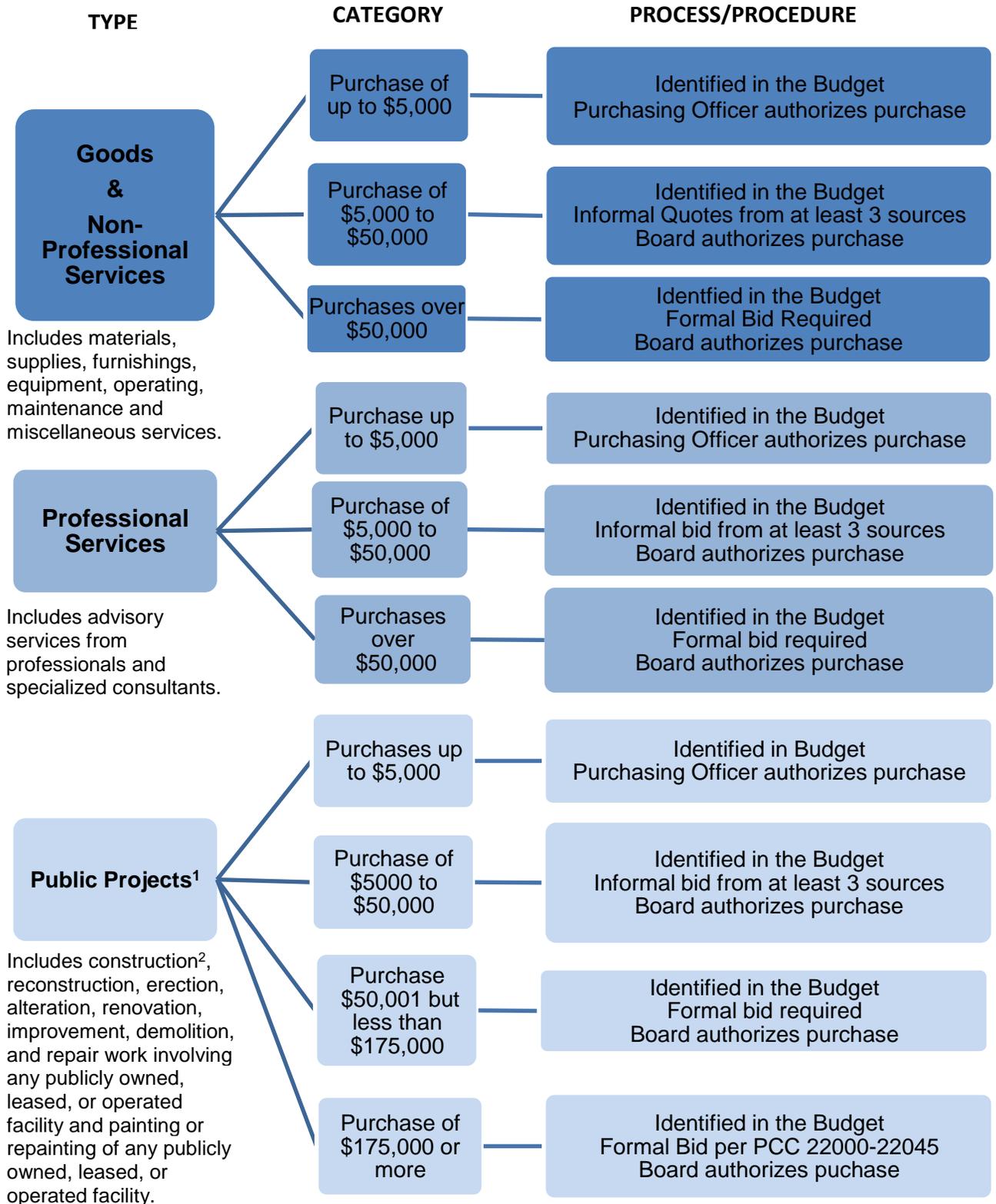
BEACON
Beach Erosion Authority for Clean
Oceans and Nourishment

PURCHASING POLICY
September 2020

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BEACON PURCHASING CATEGORIES



¹ Defined in accordance with Public Contract Code § 22002

² Construction projects using Federal funding require conferring with counsel

BEACON PURCHASING POLICY

I. PURPOSE

The purpose of this policy is to:

- Establish efficient procedures for the purchase of goods, services, and construction at the lowest possible cost commensurate with the quality needed.
- Establish procedures for contracting for professional services.
- Exercise positive financial control over purchases.
- Clearly define authority for the purchasing function.
- Assure the quality of purchases.

This policy does not cover the issuance of grants or Memorandum of Understanding's (MOUs) with other governmental or private agencies as these would have separate policies or procedures.

II. EXECUTIVE DIRECTOR AND AUTHORITY

Pursuant to Section 6502 of the Government Code, BEACON may jointly exercise any power common to its member agencies and is required to adopt policies and procedures, including bidding regulations, that govern purchases of supplies and equipment by means of a written rule or regulation. (Gov. Code §§ 54202, 54204). BEACON's joint powers agreement (JPA) authorizes adoption of rules as may be required for the orderly operation of the organization. (JPA § 5.f; Bylaws, § 2.F). In addition, the auditor and controller shall draw warrants or check-warrants against the funds of the organization in the treasury when the demands are approved by the BEACON Board of Directors (Board) or such other persons as may be specifically designated for that purpose in the by Laws (JPA § 15). On September 18, 2020, in accordance with Section 15 of the JPA, the Board designated the Executive Director to approve demands against the funds of the organization in the treasury. By Resolution 2020-1, the Executive Director is the Purchasing Officer for BEACON in accordance with the policy described herein.

As the Purchasing Officer, the Executive Director shall be responsible for the purchase of all goods and services for BEACON under this policy. No expenditures shall be submitted or recommended to the Board without approval of the Purchasing Officer. The Purchasing Officer shall have the authority to make purchases for BEACON in accordance with this policy, unless otherwise directed by the Board. The Purchasing Officer shall ensure that all purchases are made in accordance with the budgets authorized by the Board.

BEACON PURCHASING POLICY

III. PURCHASING OFFICER AUTHORITY

The Purchasing Officer is authorized to enter into and sign on behalf of BEACON, without the prior approval of the Board, a contract for goods, services, or public projects:

- A. Which contains up to an initial maximum amount not to exceed \$5,000.
- B. To approve monthly progress payments when required or to release contract retention.

IV. Methods of Purchasing—Goods and Non-Professional Services

Goods are those items such as office supplies. A contract for goods is a contract for the purchase of supplies, materials or equipment, including, but not limited to, office supplies, janitorial supplies, furnishings, machinery, tools, vehicles, computer hardware and other personal property, materials or goods. A contract for goods may include purchase of labor incidental to the purchase of goods, such as set-up, installation and testing. A non-professional services contract is a contract, with or without the furnishing of supplies or equipment, for work, labor or services, including, but not limited to:

- A. Maintenance of public buildings, streets, parks and playgrounds and other public improvements;
- B. Repair, modification and maintenance of equipment;
- C. Licensing, installation and maintenance of computer software;
- D. Janitorial services, uniform cleaning, tree trimming, street sweeping, power washing and landscape maintenance;
- E. Leasing of personal property for use by BEACON; and
- F. Temporary employment or payroll service contracts.

Purchases of Five Thousand and No/100ths (\$5,000.00) Dollars or less--Small purchases

Purchases, the cost of which are \$5,000 or less in any one transaction, shall be made using simplified and cost-effective operational procedures without the required use of formal or informal bids. Purchases less than \$5,000 may be authorized by the Purchasing Officer when the Board has appropriated funds for the item(s) and the amount of the award is not more than the appropriated amount. Purchasing requirements shall not be artificially divided so as to avoid the provisions of this section.

BEACON PURCHASING POLICY

Purchases of more than Five Thousand and 01/100ths (\$5,000.01) Dollars, up to Fifty Thousand and No/100ths (\$50,000.00) Dollars -- Informal bid process

- A. Informal bid procedure. The purchase of goods and non-professional services greater than \$5,000.01 but less than \$50,000.00, may be made on the open market, following the procedure prescribed below:
1. Minimum number of quotations. Open-market purchases shall, whenever possible, be based on at least three (3) quotations and shall be awarded to the lowest responsible quotation;
 2. Notice inviting quotations. The division making the purchase shall solicit quotations by written (including e-mail), verbal request to prospective vendors;
 3. Quotations. Quotations shall be submitted in writing (including facsimile and e-mail or generated via online search engine) to BEACON, which shall keep a record of all open-market orders and period specified;
 4. Award of contracts. The Board shall award a contract for the purchase of goods and non-professional services with a value of more than \$5,000. A contract shall be awarded to the lowest responsible bidder, except as otherwise provided herein. A contract may be awarded to the next lowest responsible bidder if the successful bidder refuses or fails to execute the contract. If the first two lowest responsible bidders fail to execute the contract, then BEACON will reopen the bidding; and
 5. Tie bids. If two (2) or more bids received are for the same total amount of unit price and quality, service, and delivery being equal, and if the public interest will not permit the delay of re-advertising for bids, those involved in the evaluation of the bids shall accept the lowest good faith offer by negotiation with the tie bidders.
- B. Exceptions. The open-market procedure may be dispensed with in accordance with provisions set forth in "Exceptions to the bidding process".

Purchases of more than Fifty Thousand and 01/100ths (\$50,000.01) Dollars-- Formal bid process

- A. Formal contract procedures. BEACON shall purchase goods and non-professional services of a value greater than \$50,000 following the formal bid procedure prescribed below:
1. Notice inviting bids. The notice inviting bids shall include a general description of the goods or non-professional services to be purchased, and shall state where bid forms and specifications may be secured and the time and place for opening bids;

BEACON PURCHASING POLICY

- a. Published notice. The notice inviting bids shall be published on BEACON's website at least ten (10) days before the date of the opening of the bids; and
 - b. Bidders' list. BEACON shall also solicit sealed bids from responsible prospective suppliers whose names are on a bidders' list.
 2. Bidders' security. When deemed necessary, BEACON shall require bidders' security. Bidders' security shall be in accordance with the provisions of the California Public Contract Code;
 3. Bid opening procedure. Bidders shall submit sealed bids to the Purchasing Officer or Designee and shall identify them as bids on the envelope. Bids shall be opened in public at the time and place stated in the public notices. A tabulation of all bids received shall be open for public inspection during regular business hours for a period of not less than twenty-five (25) calendar days after the bid opening;
 4. Rejection of bids. Bids failing to meet requirements shall be deemed non-responsive and rejected from consideration. At its discretion, the Board may reject any and all bids presented and may instead direct BEACON staff to re-advertise for bids;
 5. Award of contracts. The Board shall award a contract for the purchase of goods and non-professional services with a value of more than \$5,000. A contract shall be awarded to the lowest responsible bidder, except as otherwise provided herein. A contract may be awarded to the next lowest responsible bidder if the successful bidder refuses or fails to execute the contract. If the first two lowest responsible bidders fail to execute the contract, then BEACON will reopen the bidding;
 6. Tie bids. If two (2) or more bids received are for the same total amount of unit price and quality, service, and delivery being equal, and if the public interest will not permit the delay of re-advertising for bids, those involved in the evaluation of the bids shall accept the lowest good faith offer by negotiation with the tie bidders; and
 7. Performance bonds. BEACON has the authority to require a performance bond before entering a contract, in such amount as is reasonably necessary to protect the best interest of BEACON or any of the jurisdictions. If a performance bond is required, the form and amount of the bond shall be described in the notice inviting bids.
- B. Exceptions. Bidding under this section may be dispensed with in accordance with provisions set forth in the section titled "Exceptions to the bidding process".

BEACON PURCHASING POLICY

V. Methods of Purchasing--Professional Services

Professional services are occupations requiring special training in the arts or sciences. Some professional services require holding professional licenses such as architects, auditors, engineers, doctors, and lawyers. The following section pertains to these types of professional service and public works contracts as per Government Code section 4528.

Professional services with a value of Five Thousand and No/100ths (\$5,000.00) Dollars or less.

Professional services valued at \$5,000 or less, shall be contracted using simplified and cost-effective operational procedures without the requirement of soliciting requests for proposals from multiple professional service providers. Purchases less than \$5,000 may be authorized by the Purchasing Officer when the Board has appropriated funds for the item(s) and the amount of the award is not more than the appropriated amount. Purchasing requirements shall not be artificially divided so as to avoid the provisions of this section.

Professional services with a value of more than Five Thousand and 01/100ths (\$5,000.01) Dollars to Fifty Thousand and No/100ths (\$50,000.00) Dollars

- A. Informal request for proposal (RFP) procedure. The purchase of services with a value greater than \$5,000 up to \$50,000 shall be made following the procedure prescribed below:
 1. Solicitation of proposals. BEACON may solicit proposals by written (including e-mail) or verbal request to prospective consultants. Informal requests for proposals shall, whenever possible, be based on at least three (3) written proposals.
 2. Evaluation. The proposal selection process is based on "Best Value" and may include evaluation of qualifications, proposed costs, responsiveness, and responsibility of the Offeror. Accordingly, BEACON may not necessarily make an award to the Offeror with the highest technical ranking nor award to the Offeror with the lowest price that is technically acceptable if doing so would not be in the overall best interest of BEACON.
 3. Award of contracts. The Board shall award a contract for professional services with a value of greater \$5,000. The award shall be made on Best Value, unless an exception applies.
- B. Exceptions. The request for informal proposal procedure may be dispensed with when the Purchasing Officer in his or her best judgment makes a written finding that compliance with these procedures is not in the best interest of the BEACON.

BEACON PURCHASING POLICY

Professional services with a value of more than Fifty Thousand and 01/100ths (\$50,000.01) Dollars.

- A. Formal request for proposal (RFP) procedures. BEACON shall purchase services with a value of more than \$50,000 following the procedure prescribed below, or in the alternative the RFQ procedure:
1. Request for proposals. The request for proposal (RFP) shall include a general description of the services to be purchased, shall include a proposed professional services agreement, and the time and place for submission of proposals. A notice inviting proposals shall be distributed to at least three (3) organizations and shall be posted on the BEACON website at least ten (10) days prior to the deadline for submission of proposals. Offerors shall submit sealed proposals and shall identify them as proposals on the envelope;
 2. Evaluation of proposals. All responsive proposals shall be reviewed and evaluated by BEACON in order to determine which Offeror best meets BEACON's needs by demonstrating the competence and professional qualifications necessary for the satisfactory performance of the required services. The criteria by which BEACON shall evaluate proposals will be set forth in the request for proposals. BEACON reserves the right to reject any and all proposals or waive any irregularities in any proposal/quote or the proposal process. The proposal selection process is based on "Best Value" and may include evaluation of qualifications, proposed costs, responsiveness, and responsibility of the Offeror. Accordingly, BEACON may not necessarily make an award to the Offeror with the highest technical ranking nor award to the Offeror with the lowest price that is technically acceptable if doing so would not be in the overall best interest of BEACON; and
 3. Award of contract. The Board shall award a contract for professional services with a value of greater \$5,000. A contract shall be awarded to the best qualified and most responsible Offeror. The award shall be made on Best Value, unless an exception applies. If the first Offeror selected fails to execute the contract, then may proceed to the next Best Value.
- B. Formal Request for Qualifications (RFQ) procedures. RFQ procedures may be used as an alternative to RFP procedures. BEACON shall procure services with a value of more than \$50,000 following the procedure prescribed below:
1. Request for Qualifications. The Request for Qualifications (RFQ) shall include a general description of the services to be procured, shall include a proposed professional services agreement, and the time and place for submission of qualifications. A notice inviting the submittal of qualifications shall be distributed to at least three (3)

BEACON PURCHASING POLICY

organizations and shall be posted on the BEACON website at least ten (10) days prior to the deadline for submitting the Statements of Qualifications (SOQ's);

2. Evaluation of Statements of Qualifications. All responsive SOQ's shall be reviewed and evaluated by BEACON in order to determine which submittal best meets BEACON's needs by demonstrating the competence and professional qualifications necessary for the satisfactory performance of the required services. The criteria by which BEACON shall evaluate SOQ's will be set forth in the RFQ. BEACON reserves the right to reject any and all SOQ's or waive any irregularities in any qualifications-based submittal process. The proposal selection process is based on "Best Value" and may include evaluation of qualifications, proposed costs, responsiveness, and responsibility of the Offeror. Accordingly, BEACON may not necessarily make an award to the Offeror with the highest technical ranking nor award to the Offeror with the lowest price that is technically acceptable if doing so would not be in the overall best interest of BEACON; and
3. Award of contract. The Board shall award a contract for professional services with a value of greater \$5,000. A contract shall be awarded to the best qualified and most responsible Offeror. The award shall be made on Best Value, unless an exception applies. If the first Offeror selected fails to execute the contract, then may proceed to the next Best Value.

C. Exceptions. Bidding under this section may be dispensed with in accordance with provisions set forth in the section titled "Exceptions to the bidding process".

VI. Methods of Purchasing – Public Projects

The dollar amount thresholds provided in this section shall automatically adjust upon the effectiveness of any adjustment notification by the State Controller in accordance with Public Contract Code section 22020, without the necessity of amending this section or any subsection herein to reflect any such adjustment.

Public Projects Defined

A public project is as defined in Section 22002(c) of the Public Contract Code and means the following:

- A. Construction, reconstruction, erection, alteration, renovation, improvement, demolition and repair work involving any publicly owned, leased or operated facility; or
- B. Painting or repainting of any publicly owned, leased, or operated facility.

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A Public Project pursuant to the Public Contract Code section 22002(d) does not include maintenance work. For purposes of this section maintenance work includes the following:

- A. Routine, recurring and usual work for the preservation or protection of any publicly owned or publicly operated facility for its intended purposes;
- B. Minor repainting;
- C. Resurfacing of streets and highways at less than one inch; or
- D. Landscape maintenance, including mowing, watering, trimming, pruning, planting, replacement of plants and servicing of irrigation and sprinkler systems.

Facility is as defined in Section 22002(e) of the Public Contract code means any plant, building, structure, ground facility, real property, streets and highways or other public work improvement.

Public Projects with a value of Five Thousand and No/100ths (\$5,000.00) Dollars or less.

Public Projects valued at \$5,000 or less, shall be contracted using simplified and cost effective operational procedures without the requirement of soliciting requests for bids from multiple providers. Purchases less than \$5,000 may be authorized by the Purchasing Officer when the Board has appropriated funds for the item(s) and the amount of the award is not more than the appropriated amount. Purchasing requirements shall not be artificially divided so as to avoid the provisions of this section.

Public Projects with a value of more than Five Thousand and 01/100ths (\$5,000.01) Dollars to Fifty Thousand and No/100ths (\$50,000.00) Dollars

- A. Informal bid procedure. The purchase for which a public project has a value of \$5,000 to \$50,000 or less, may be made on the open market, following the procedure prescribed below:
 - 1. Minimum number of quotations. Open-market purchases shall, whenever possible, be based on at least three (3) quotations and shall be awarded to the lowest responsible quotation;
 - 2. Notice inviting quotations. The division making the purchase shall solicit quotations by written (including e-mail), verbal request to prospective vendors;
 - 3. Quotations. Quotations shall be submitted in writing (including facsimile and e-mail or generated via online search engine) to BEACON, which shall keep a record of all open-market orders and period specified; and
 - 4. Award of contracts. The Board shall award a contract for a public

BEACON PURCHASING POLICY

project with a value of more than \$5,000. A contract shall be awarded to the lowest responsible bidder, except as otherwise provided herein. A contract may be awarded to the next lowest responsible bidder if the successful bidder refuses or fails to execute the contract. If the first two lowest responsible bidders fail to execute the contract, then BEACON may reopen the bidding or proceed to the next lowest responsible bidder.

5. Tie bids. If two (2) or more bids received are for the same total amount of unit price and quality, service, and delivery being equal, and if the public interest will not permit the delay of re-advertising for bids, the committee conducting the evaluation of the bids may accept the one it chooses, or accept the lowest good faith offer by negotiation with the tie bidders.

B. Exceptions. Bidding under this section may be dispensed with in accordance with provisions set forth in the section titled "Exceptions to the bidding process".

Public Project with a value of more than Fifty Thousand and 01/100ths (\$50,000.01) Dollars but less than \$175,000.

A. Formal Public Project Contract procedures. BEACON may enter into a contract for completion of a public project with a value of more than \$50,000 but less than \$175,000 through the following below:

1. Notice inviting bids. The notice inviting bids shall include a general description of the public project to be completed, and shall state where bid forms and specifications may be secured and the time and place for opening bids;
 - a. Published notice. The notice inviting bids shall be published on BEACON's website at least ten (10) days before the date of the opening of the bids; and
 - b. Bidders' list. BEACON shall also solicit sealed bids from responsible prospective suppliers whose names are on a bidders' list.
2. Bidders' security. When deemed necessary, BEACON shall require bidders' security. Bidders' security shall be in accordance with the provisions of the California Public Contract Code;
3. Bid opening procedure. Bidders shall submit sealed bids to the Purchasing Officer or Designee and shall identify them as bids on the envelope. Bids shall be opened in public at the time and place stated in the public notices. A tabulation of all bids received shall be open for public inspection during regular business hours for a period of not less than twenty-five (25) calendar days after the bid opening;

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4. Rejection of bids. Bids failing to meet requirements shall be deemed non-responsive and rejected from consideration. At its discretion, the Board may reject any and all bids presented and may instead direct BEACON staff to re-advertise for bids;
5. Award of contracts. The Board shall award a contract for a public project with a value of more than \$5,000. A contract shall be awarded to the lowest responsible bidder, except as otherwise provided herein. A contract may be awarded to the next lowest responsible bidder if the successful bidder refuses or fails to execute the contract. If the first two lowest responsible bidders fail to execute the contract, then BEACON will reopen the bidding.
6. Tie bids. If two (2) or more bids received are for the same total amount of unit price and quality, service, and delivery being equal, and if the public interest will not permit the delay of re-advertising for bids, the committee conducting the evaluation of the bids may accept the one it chooses, or accept the lowest good faith offer by negotiation with the tie bidders.
7. Performance bonds. BEACON has the authority to require a performance bond before entering a contract, in such amount as is reasonably necessary to protect the best interest of BEACON or any of the jurisdictions. If a performance bond is required, the form and amount of the bond shall be described in the notice inviting bids.

- B. Exceptions. Bidding under this section may be dispensed with in accordance with provisions set forth in the section titled "Exceptions to the Bidding Process".

Public Project with a value of more than One Hundred Seventy Five Thousand and 01/100ths (\$175,000.01) Dollars.

Public Projects of more than \$175,000 shall be let to contract by formal bidding procedures in accordance with applicable provisions of the Public Contract Code Sections 22000 through 22045. Absolutely no exceptions to the formal bidding procedure covered under this section shall be granted unless clearly identified in the Public Contracts Code.

VII. Methods of Purchasing – Federal Funding/Blended Local and/or State with Federal Funds

When federal funds are blended with local or state funding, the strictest requirements described in this Purchasing Policy shall apply.

Contracts using federal funds with a value of Five Thousand and No/100ths (\$5,000.00) Dollars or less.

BEACON PURCHASING POLICY

Contracts using federal funds valued at \$5,000 or less, shall be contracted using simplified and cost effective operational procedures without the requirement of soliciting requests for bids from multiple providers. Purchases less than \$5,000 may be authorized by the Purchasing Officer when the Board has appropriated funds for the item(s) and the amount of the award is not more than the appropriated amount. Purchasing requirements shall not be artificially divided so as to avoid the provisions of this section.

Purchases with a value of more than Five Thousand (\$5,00.00) Dollars but less than Two Hundred Fifty Thousands (\$250,000.00) Dollars – Informal Bid

- A. Informal bid procedure. When a purchase uses federal funding to procure goods, non-professional services, and professional services has a value of \$5,000 to \$250,000, may be made on the open market, following the procedure prescribed below:
1. Minimum number of quotations. Open-market purchases shall, whenever possible, be based on at least three (3) quotations and shall be awarded to the lowest responsible quotation;
 2. Notice inviting quotations. The division making the purchase shall solicit quotations by written (including e-mail), verbal request to prospective vendors;
 3. Quotations. Quotations shall be submitted in writing (including facsimile and e-mail or generated via online search engine) to BEACON, which shall keep a record of all open-market orders and period specified; and
 4. Award of contracts. The Purchasing Officer is authorized to award a contract of up to \$5,000 or less when the Board has appropriated funds for the item(s) and the amount of the award is not more than the appropriated amount.
- B. Exceptions. The open-market procedure may be dispensed with in accordance with provisions set forth in "Exceptions to the bidding process".

Purchases with a value of Two Hundred Fifty Thousand (\$250,000) Dollars and above – Formal Bid

- A. Formal request for proposal (RFP) procedures. When a purchase uses federal funding to procure goods, non-professional services, and professional services with a value of more than \$250,000 following the procedure prescribed below, or in the alternative the RFQ procedure:
1. Request for proposals. The request for proposal (RFP) shall include a general description of the services to be purchased, shall include a proposed professional services agreement, and the time and place for submission of proposals. A notice inviting proposals shall be

BEACON PURCHASING POLICY

distributed to at least three (3) organizations and shall be posted on the BEACON website at least ten (10) days prior to the deadline for submission of proposals. Offerors shall submit sealed proposals and shall identify them as proposals on the envelope;

2. Evaluation of proposals. All responsive proposals shall be reviewed and evaluated by BEACON in order to determine which Offeror best meets BEACON's needs by demonstrating the competence and professional qualifications necessary for the satisfactory performance of the required services. The criteria by which BEACON shall evaluate proposals will be set forth in the request for proposals. BEACON reserves the right to reject any and all proposals or waive any irregularities in any proposal/quote or the proposal process; and
3. Award of contract. The Board shall award a contract for services with a value of greater \$5,000. A contract shall be awarded to the lowest responsible bidder, except as otherwise provided herein. A contract may be awarded to the next lowest responsible bidder if the successful bidder refuses or fails to execute the contract. If the first two lowest responsible bidders fail to execute the contract, then BEACON will reopen the bidding.

- B. Exceptions. Bidding under this section may be dispensed with in accordance with provisions set forth in the section titled "Exceptions to the bidding process".

Purchases for Construction

Purchases using Federal funds for construction require more stringent rules adopted by Federal procurement policies. BEACON' will consult with counsel for guidance as to Federal rules in place at the time of purchase.

VIII. Competitive and non-competitive negotiations

- A. Applicability. A purchase may be had by negotiations when the purchase is for a sole source item or service including, but not limited to: a technology product; an addition to, repair to, or maintenance of existing equipment which can be more efficiently added to, repaired, or maintained by a particular company or manufacturer; equipment which must be compatible with existing equipment, by reason of the training of the personnel; or an inventory of existing replacement parts kept by BEACON. BEACON shall state in writing the basis for determination that this section applies. Before any negotiations take place, that determination and the method of negotiation (competitive or noncompetitive) must be first approved by the Purchasing Officer, unless otherwise directed by the Board.

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B. Competitive negotiation.

1. Request for Proposals. Proposals are requested from a minimum of three (3) vendors. The notice inviting proposals shall be published at least ten (10) days before the date of the opening of the bids if the value of the product is expected to reach more than \$5,000. Notice shall be published on BEACON's website inviting bids. The request for proposals must identify all of the significant evaluation factors, including cost and their relative importance.
2. Receipt of proposals. Sealed proposals must be submitted by the date and time specified on the notice inviting proposals and shall be identified by the Request for Proposal number.
3. Negotiation. The most qualified and responsive Offeror will be selected for contract negotiations. If agreement cannot be reached with the first Offeror, the second choice Offeror (and then the third and so on) will be contacted with the first choice Offeror (or other Offerors, in order) dismissed from further consideration on that particular project. All elements of the negotiation process shall be documented by the negotiating division and submitted to the Purchasing Officer. Responsible Offerors shall be given fair and equal treatment with respect to opportunity for discussion and revision of proposals. Any revisions are permitted after submission in writing and prior to the award of a contract.
4. Award and notification. A contract award may be made to the responsible Offeror whose proposal will be best for BEACON considering evaluation factors. All Offerors participating in the process shall be notified in writing of the successful award.

- C. Noncompetitive negotiations. When there is only one source, purchase can be made through solicitation and negotiation directly with that source. BEACON shall state in writing the basis for this determination. Before any purchase is made, that determination must be approved in writing by the Purchasing Officer, unless otherwise directed by the Board.

IX. Determination of the lowest responsible bidder

In determining the lowest responsible bidder, "responsible" has reference to trustworthiness, quality, fitness, and capacity of the low bidder to satisfactorily perform the proposed work. To determine whether or not a bidder is "responsible" or "not responsible", the following will be considered:

- A. Quality of the materials, supplies, services, and/or equipment offered;
- B. The ability, capacity, and skill of the bidder to perform the contract or

BEACON PURCHASING POLICY

provide the materials, supplies or equipment;

- C. Whether the bidder can perform the contract or provide the materials, supplies or equipment promptly or within the time specified, without delay or interference;
- D. Past performance of the bidder;
- E. The sufficiency of the bidder's financial resources to perform the contract or provide the materials, supplies, or equipment;
- F. The ability of the bidder to provide future maintenance and services if essential;
- G. The compatibility of the materials, supplies and/or equipment with BEACON's existing inventory of same;
- H. The quality and timeliness of the bidder's performance on previous orders or contracts for BEACON;
- I. The ability of the bidder to provide future maintenance and service where such maintenance and service is essential; and
- J. The character, integrity, reputation, judgment, experience, and efficiency of the bidder.

When a determination of "not responsible" is made, the low monetary bidder will be afforded an opportunity to rebut any adverse evidence and be permitted to present evidence that the bidder is qualified to perform the contract. A quasi-judicial proceeding, however, prior to rejection of the low monetary bidder as a non-responsible bidder shall not be required.

X. Procurements using only local funds - Exceptions to the bidding process

Contracts for goods, services, or public projects which the cost to BEACON in one transaction will be more than \$5,000 shall be permitted by either informal or formal competitive bidding or proposals pursuant to this policy. For contracts greater than \$10,000 partially or fully funded through federal dollars, please refer to Section XI below.

Purchasing requirements shall not be artificially divided so as to avoid the competitive bidding requirement. Nothing in this section shall preclude the solicitation of competitive bids or proposals, when possible. The following are exemptions to the competitive bidding requirements:

- A. BEACON Staff Consultants;
- B. Situations where solicitations of bids or proposals would for any reason be impractical, unavailing, or impossible;

BEACON PURCHASING POLICY

- C. Cooperative purchasing that have been competitively bid within the past five (5) years whose purchasing process is consistent with the provision of the policy;
- D. Sole source goods or services;
- E. Insurance and bonds;
- F. Purchasing funded by grants, donations, or gifts when the special conditions attached to the grants, donations, or gifts require the purchase of particular goods and/or services to be purchased in a more specific manner than described herein;
- G. Goods and/or services obtained from or through agreement with any governmental, public, or quasi-public entity;
- H. Works of art, entertainment, or performance;
- I. Membership dues, conventions, training, and travel arrangements;
- J. Advertisements in magazines, newspapers, or other media;
- K. Where competitive bids or proposals have been solicited and no bid or proposal has been received. In such a situation the Purchasing Officer may proceed to have the services performed or the goods purchased without further competitive bidding.

XI. Procurements partially or fully funded through federal dollars – Exceptions to the bidding process

Pursuant to Title 2, Code of Federal Regulations, section 200.320, procurement by noncompetitive proposals is procurement through solicitation of a proposal from only one source and may be used only when one or more of the following circumstances apply:

- A. The acquisition of property or services, the aggregate dollar amount of which does not exceed \$10,000;
- B. The item is available only from a single source;
- C. The public exigency or emergency for the requirement will not permit a delay resulting from competitive solicitation;
- D. The Federal awarding agency or State expressly authorizes noncompetitive proposals in response to a written request from BEACON; or
- E. After solicitation of a number of sources, competition is determined inadequate.

RESOLUTION OF THE BEACH EROSION AUTHORITY
FOR CLEAN OCEANS AND NOURISHMENT
(BEACON)

ADOPT A PURCHASING POLICY AND
AUTHORIZE AND DELEGATE AUTHORITY TO
THE EXECUTIVE DIRECTOR TO ACT AS THE
PURCHASING OFFICER IN ACCORDANCE
WITH THE ADOPTED POLICY

RESOLUTION NO. 2020-1

WHEREAS the Beach Erosion Authority for Clean Oceans and Nourishment (BEACON) desires to clearly define authority for the purchasing function by establishing procedures for contracting for goods, services, and public projects;

WHEREAS BEACON is established under a joint powers agreement (JPA) executed by each of the incorporated cities and the counties;

WHEREAS BEACON is responsible to coordinate beach erosion control and beach nourishment among its member agencies;

WHEREAS BEACON is also charged with promoting coastal resources restoration and coastal water quality;

WHEREAS BEACON works with partners, including public agencies and private organizations, raising and spending funds to accomplish its programs and policies;

WHEREAS BEACON is required to adopt policies and procedures, including bidding regulations, that govern purchases of supplies and equipment by means of a written rule or regulation (Gov. Code §§ 54202, 54204);

WHEREAS pursuant to Section 6502 of the Government Code, BEACON may jointly exercise any power common to its member agencies;

WHEREAS BEACON is authorized to adopt rules as may be required for the orderly operation of the organization (JPA § 5.f; Bylaws, § 2.F);

WHEREAS the auditor and controller shall draw warrants or check-warrants against the funds of the organization in the treasury when the demands are approved by the Board of Directors or such other persons as may be specifically designated for that purpose in the by Laws (JPA § 15);

WHEREAS, BEACON Board of Directors desires to adopt the attached Purchasing Policy and to designate the Executive Director as the Purchasing Officer;

WHEREAS, in accordance with Section 15 of the JPA, and the attached Purchasing Policy, the Board of Directors wishes to authorize and designate the Purchasing Officer to award a contract of up to \$5,000 or less when the Board of Directors has appropriated funds for the item(s) and the amount of the award is not more than the appropriated amount as described in the policy;

WHEREAS, the BEACON Board of Directors wishes to direct the auditor and controller to draw warrants or check-warrants against the funds of the organization in the treasury when the demands are approved by the Purchasing Officer in accordance with the Purchasing Policy.

NOW, THEREFORE, IT IS HEREBY RESOLVED THAT BEACON adopts the attached purchasing policy.

IT IS FURTHER RESOLVED THAT BEACON authorizes and delegates authority to its Executive Director, to act as the Purchasing Officer for the period of September 18, 2020 through September 17, 2030.

IT IS FURTHER RESOLVED THAT the Purchasing Officer is authorized to award a contract of up to \$5,000 or less when the Board of Directors has appropriated funds for the item(s) and the amount of the award is not more than the appropriated amount as described in the policy.

IT IS FURTHER RESOLVED THAT the BEACON Board of Directors directs the auditor and controller to draw warrants or check-warrants against the funds of the organization in the treasury when the demands are approved by the Purchasing Officer in accordance with the Purchasing Policy.

PASSED AND ADOPTED this 18th day of September 2020 by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

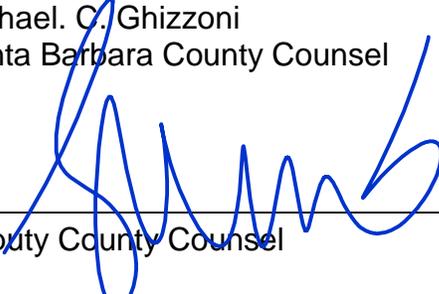
Gregg Hart, Chair
Beach Erosion Authority for Clean Oceans and Nourishment
BEACON

Date: _____

ATTEST:

Marc Beyeler, Executive Director

APPROVED AS TO FORM:
Michael C. Ghizzoni
Santa Barbara County Counsel



Deputy County Counsel



A California Joint Powers Agency

Member Agencies

Fred Shaw
City of Carpinteria

Kyle Richards
City of Goleta

Carmen Ramirez
City of Oxnard

Steven Gama
City of Port Hueneme

Christy Weir, Vice-Chair
City of San Buenaventura

Eric Friedman
City of Santa Barbara

Gregg Hart, Chair
Das Williams
County of Santa Barbara

Steve Bennett
John Zaragoza
County of Ventura

Executive Director
Marc Beyeler

Santa Barbara Address:
105 East Anapamu, Suite 201
Santa Barbara, CA 93101

Ventura Address:
501 Poli St.
P.O. Box 99
Ventura, CA 93001

Email:
Office@Beacon.ca.gov

Website:
<http://www.beacon.ca.gov>

STAFF REPORT

Meeting Date: September 18, 2020
Agenda Item: 5B3

To: BEACON Board of Directors
From: Executive Director

Date: September 9, 2020

Subject: Appointment of Brian Brennan as Special Projects Advisor

RECOMMENDATION:

- i. Receive a Staff Report on Special Projects Staff;
- ii. Adopt Resolution 2020-2 appointing Brian Brennan as Special Projects Volunteer Staff for a period up to June 30, 2021 (Exhibit 1).

DISCUSSION:

Until May 2020, Brian Brennan served as BEACON's Executive Director and was involved in several important ongoing BEACON projects. Upon his retirement, he continues to assist BEACON executive staff on a select number of important BEACON projects. Mr. Brennan possesses unique knowledge and understanding of the projects and has extensive experience working with project partners that is invaluable in successfully completing the projects. In order to continue BEACON implementation actions, BEACON staff require the assistance of Mr. Brennan.

Without a formal appointment, however, Mr. Brennan does not have full access to BEACON project documents and internal communications.

In order to be effective in providing assistance, Mr. Brennan requires access to the full range of project communications. It is the desire of BEACON Executive Director to continue Mr. Brennan's involvement in certain BEACON projects to assist BEACON staff on essential project tasks for a period until June 30, 2020. BEACON executive staff is recommending the BEACON Board appoint Mr. Brennan as a Special Projects Volunteer Staff.

RESOLUTION OF THE BEACH EROSION AUTHORITY
FOR CLEAN OCEANS AND NOURISHMENT
(BEACON)

APPOINTING BRIAN BRENNAN AS SPECIAL
PROJECTS VOLUNTEER STAFF

RESOLUTION NO. 2020-2

WHEREAS the Beach Erosion Authority for Clean Oceans and Nourishment (BEACON) desires to define the relationship of Brian Brennan to the agency for assisting in project development and implementation of select projects;

WHEREAS BEACON is established under a joint powers agreement (JPA) executed by each of the incorporated cities and the counties;

WHEREAS BEACON is charged with developing and implementing regional sediment management, beach and coastal restoration projects (JPA § 3, 5.d., 5.e.; Bylaws, Art. 1, § 3.B.);

WHEREAS BEACON established the Beach Shoreline San Supply and Public Access Fund in 2014;

WHEREAS pursuant to Section 6502 of the Government Code, BEACON may jointly exercise any power common to its member agencies;

WHEREAS BEACON is authorized to engage knowledgeable staff to assist in the implementation of BEACON projects (Bylaws, Art. VII, § 1);

WHEREAS Brian Brennan has demonstrated specialized knowledge of BEACON projects and has extensive relationships with BEACON project partners which are invaluable in successfully implementing BEACON projects.

NOW, THEREFORE, IT IS HEREBY RESOLVED THAT BEACON appoints Brian Brennan as a Special Projects Volunteer Staff for the period up to June 30, 2021.

PASSED AND ADOPTED this 18th day of September 2020 by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

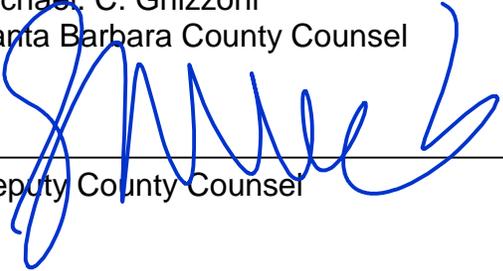
Gregg Hart, Chair
Beach Erosion Authority for Clean Oceans and Nourishment
BEACON

Date: _____

ATTEST:

Marc Beyeler, Executive Director

APPROVED AS TO FORM:
Michael C. Ghizzoni
Santa Barbara County Counsel



Deputy County Counsel



A California Joint Powers Agency

Member Agencies

Fred Shaw
City of Carpinteria

Kyle Richards
City of Goleta

Carmen Ramirez
City of Oxnard

Steven Gama
City of Port Hueneme

Christy Weir, Vice-Chair
City of San Buenaventura

Eric Friedman
City of Santa Barbara

Gregg Hart, Chair
Das Williams
County of Santa Barbara

Steve Bennett
John Zaragoza
County of Ventura

Executive Director
Marc Beyeler

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Santa Barbara, CA 93101

Ventura Address:
501 Poli St.
P.O. Box 99
Ventura, CA 93001

Email:
Office@Beacon.ca.gov

Website:
<http://www.beacon.ca.gov>

STAFF REPORT

Meeting Date: September 18, 2020
Agenda Item: 6

To: BEACON Board of Directors
Fr: Executive Director

Date: September 10, 2020

Subject: Executive Director's Report and Communications