

EXHIBIT A

SCOPE OF WORK

Name of Local Government: City of Santa Cruz

Name of Project: Development of Local Coastal Program strategies and policies to support beach and public access protection in Santa Cruz

Funding Source: Greenhouse Gas Reduction Fund

Specific Program: Local Coastal Program

Federal Tax ID#: 94-6000427

Budget Summary:

CCC funding:	\$200,000
<u>Other funding:</u>	<u>\$ 86,000</u>
Total project cost:	\$286,000

Term of Project: March 1, 2019 *or grant agreement execution date* – December 31, 2020

A. PROJECT DESCRIPTION

The City of Santa Cruz's (the City) coastline, totaling approximately 4.6 miles, is a prime recreational resource and destination for residents and visitors, providing scenic views and almost unparalleled recreational opportunities within a relatively compact space. There are over 3 million visitor trips taken to Santa Cruz County each year. Public roads follow most of the length of Santa Cruz's coastline, providing direct public access to the Pacific Ocean and Monterey Bay. As a result, coastal recreation areas provide the public with a variety of cultural, tourism and recreational activities important to the City's economy as well as provision of critical habitat. The City developed a sea level rise (SLR) vulnerability assessment that identifies extensive exposure of these coastal resources in addition to human infrastructure and natural systems, potentially resulting in hundreds of millions of dollars in economic damages by mid-century. The SLR vulnerability assessment and a social vulnerability to climate change analysis were used in the City's recent updates to its Climate Adaptation Plan and Local Hazard Mitigation Plan to prepare climate resilience strategies. These Plans identify potential adaptation response alternatives including coastal development policies and "grey to green" infrastructure. However, there has been less attention given to understanding how the City could move adaptation policies beyond project by project regulatory procedures to achieve preferred and coordinated coastline specific adaptation strategies. Decision makers and property owners are hence left with limited information on how their actions will or will not lead to a coastline that is resilient, enjoyable and accessible to all. **The goal of this project is to provide the Santa Cruz community**

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and decision makers with more comprehensive information and recommendations for programs, policies, and actions that can achieve resilient coastal access, use, and beach management, and to integrate them into a Local Coastal Program (LCP) Update.

By integrating SLR policies into the LCP, the City is poised to make policy decisions on how to adapt to SLR, but the City currently possesses limited information regarding the secondary consequences of adaptation strategies on coastal resources and public access as well as the socially vulnerable community members who use, live and work near these assets. Moreover, the City is challenged to identify feasible policy options that support city operations, community preferences, and planning obligations while also promoting beach and coastal resiliency. Specifically, the City will begin work in late 2018, funded by CalTrans, to complete the long-awaited West Cliff Drive Shoreline Adaptation and Management Plan (West Cliff Plan) that will define long term management and adaptation strategies for this section of the City's coast. However, West Cliff represents only two thirds of the City's coastline and the West Cliff Plan will focus primarily on the transportation system (including the multi-use path that is seaward of West Cliff Drive). Thus the City must enhance its efforts to define long-term management and adaptation strategies for the low-lying beaches, many subjected to coastal squeeze, and the cliffs and/or development backing them (e.g., West Cliff's pocket beaches, Natural Bridges, Harbor/Twin Lakes, Seabright, Main and Cowell).

Objective 1. Document how coastal decisions regarding protection and managed retreat priorities can alter coastal resources (e.g., beaches, littoral transport, surf breaks, and access ways) and impact residents exposed to risks, particularly the socially vulnerable communities along the entire coastline.

Objective 2. Identify fiscal, policy and engineering strategies to mitigate any secondary consequences (e.g., impacts to recreation, tourism, affordable housing for low income communities, etc.) and establish "trigger metrics" and thresholds upon which strategies should be implemented.

Objective 3. Use 21st century tools to engage the community to visualize past and future coastline alignments and coastal resources to evaluate the tradeoffs and secondary implications of programmatic and policy options that can be adopted to minimize coastal resource risks, provide a flexible and adaptive pathway towards resilience, and maximize co-benefits with particular focus on socially vulnerable populations.

Objective 4. Integrate the outputs of Objectives 1 through 3 into recommendations for policies and actions the City should undertake as part of the LCP update, including the Land Use Plan and Implementation Plan, to ensure sustainable coastal access and beaches.

Objective 5. Complete and adopt the LCP update

B. TASKS

Task 1: Project Management, Administration, and Coordination

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While the project director is Lee Butler, Planning and Community Development Director, project coordination and implementation will be co-managed by Dr. Tiffany Wise-West (Sustainability and Climate Action Manager in the City Manager's Office) and Sarah Fleming (Principal Planner overseeing long-range planning efforts in the Planning and Community Development Department). Dr. Wise-West will focus on objectives 1, 2, 3 and 4. Ms. Fleming will focus on objectives 2, 3, 4 and 5.

The co-project managers will work with appropriate City departments and staff to administer subcontracts, track and complete all invoices and submit quarterly reports. Dr. Wise-West will also work with the Commission to document compliance with Greenhouse Gas Reduction Fund (GGRF) requirements and report to the California Air Resources Board on project outcomes.

The co-project managers will form and lead a multidisciplinary Project Team including both internal staff and external consultants. Over the past two years spent developing foundational studies, characterizing risks, and conducting extensive outreach in support of the *2018 Climate Adaptation Update* (a living document to be formally adopted by City Council on October 9, 2018), the City's Climate Action Program has forged relationships with a diverse and wide range of community stakeholders including (but not limited to) socially vulnerable serving organizations, environmental advocates, and coastal use organizations. The Project Team will form a Project Advisory Group (PAG) comprised of representatives from these stakeholder organizations. The project co-managers will prepare a detailed scope of responsibility and schedule for PAG engagement throughout each Task of the proposed project. The co-project managers will also interface with Coastal Commission staff on review of draft and final deliverables.

Through a project fact sheet and slide deck presentations at climate adaptation fora, the project team will coordinate with local, regional and state agencies and collaboratives to share the best practices, lessons learned and outcomes of the project and encourage replication across other coastal jurisdictions (e.g., webinars, California Adaptation Forum, etc.). All project deliverables that are public facing will be translated in Spanish.

Outcomes/Deliverables:

- PAG Scope of Responsibility and Schedule
- Project Fact Sheet and Slide Deck
- Quarterly Invoices and Quarterly Progress Reports

Task 2: Urban Climate Adaptation Policy Implication and Response Strategy Evaluation

Steps 1, 2 and 3 from the *Coastal Commission's Sea Level Rise Policy Guidance's* Chapter 5 (Addressing SLR in LCPs) have been substantially completed through recent prior work conducted by the City and Step 4 is in progress. The project will bring Step 4 to completion by analyzing the consequences of adaptation policies and strategy alternatives, highlighting their impact to vulnerable communities along the entire Santa Cruz coastline, and engaging with the public on those costs and tradeoffs to create a shared vision for coastal beach management.

Central Coast Wetlands Group (CCWG), led by Ross Clark, prepared the City's sea level rise vulnerability assessment, has prepared this type of secondary policy implication analysis for other jurisdictions, and is a recognized leader in supporting coastal resilience in

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the Monterey Bay. Thus, the City will outsource the work to the team led by CCWG. We anticipate this team that will include coastal engineers, ecologists, and economists. Together, the CCWG team and City staff will work as the "Project Team." In Task 2, the Project Team will identify, analyze and document how coastal decisions regarding protection and managed retreat priorities can alter coastal resources (e.g., beaches, littoral transport, surf breaks, and access ways) along the entire Santa Cruz coastline.

Subtasks:

2.1: Policy and Strategy Analysis – The evaluation methodology will include qualitative, quantitative, and geospatial analysis to assess secondary policy and strategy implications, adapting elements from the *Adapting to Rising Tides How-To Guide* and the *Framework for Building Regional Resilience in California's Workbook for Local Governments*. The evaluation will focus on policy and strategies for coastal adaptation, including those called out in the City's *Administrative Draft LCP, 2018 Climate Adaptation Plan Update* and those recommended in the *Coastal Commission Sea Level Rise Policy Guidance* (e.g., setback policies, seawall maintenance bonds, design guideline changes). The aim is to specifically understand the incremental effects of coastal adaptation policy on coastal resources to inform more strategic, iterative approaches to climate adaptation. In this evaluation, the Project Team will identify fiscal, policy and engineering strategies to mitigate any secondary consequences (e.g., impacts to recreation, tourism, affordable housing of low income communities, etc.) and establish "trigger metrics" to monitor and thresholds upon which strategies should be implemented. The evaluation will assess land use patterns and projections to understand potential spatial changes to demographic distribution over time. It will include site-specific policy constraint and opportunity evaluations necessary to implement different adaptation pathways. In this subtask the project team will coordinate and integrate evaluations and recommendations with those conducted for the West Cliff Drive Shoreline Adaptation and Management as they relate to access and the multi-use path on the seaward side of West Cliff.

The Project Team will evaluate traditional public finance options and innovative funding strategies that leverage public, private, and industry resources for the strategies recommended to mitigate secondary consequences of adaptation policies. Through Task 3, these strategies, their costs, tradeoffs, and funding mechanisms will be introduced to decision makers and the public to evaluate how more equitable cost share strategies will bring stakeholder priorities into alignment for a community-informed vision of coastal management. The evaluation will support the integration of policies and programs (seawall mitigation funds, beach nourishment programs, defined coastal retreat areas) using an adaptive pathway framework needed to maintain beaches, coastal access and recreation. Subtasks 2.1 and 2.2 will be completed concurrently.

2.2: Socially Vulnerable Populations Impact Analysis – The Project Team will invite the PAG, environmental justice groups and members of socially vulnerable community groups representing, as feasible, both residents and non-residents who visit, work or recreate at the coast, to structure the evaluation methodology and together will identify disproportionate distribution of potential loss of coastal access, historical and cultural resources, recreational opportunities and service within socially vulnerable communities (e.g., persons living with poverty, advanced age, disability, and non-English speakers) through an exposure/sensitivity/adaptive capacity framework. Together, we will quantify the unique needs of vulnerable communities to ensure that coastal adaptation policy and fiscal

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decisions specifically account for these community's needs. Focus area adaptation evaluations will identify the unique challenges posed by various adaptation alternatives and the loss of service implications on these communities. This subtask will also be coordinated with the West Cliff Plan project.

Expanding upon the work completed recently in the City's social vulnerability to climate change geospatial analysis, the Project Team will characterize and illustrate the geographic distribution of socially vulnerable communities, as well as their connections and dependencies to critical coastal resources, including coastal access, coastal jobs (visitor serving, agriculture, etc.), recreation, historical, cultural and spiritual resources, and others. The Project Team will compile and present adaptation alternative recommendations to PAG, other environmental justice groups and members of socially vulnerable communities for ground-truthing. After this iterative process, the Project Team will have a sound set of actionable short and long term strategies to minimize the impacts from future coastal management choices and provide benefits to vulnerable communities.

2.3 Evaluation Synthesis Documentation – The Project Team will prepare a technical report that includes detailed Risk/Exposure/Vulnerability/Consequence descriptions. The descriptions will be supplemented by beach specific maps of the coastline that project the implications of implementation of local adaptation policies and strategies, including distribution and scale of beach areas, visual impacts of future protective structures, changes to coastal access and use, changes to natural resource distribution and condition, and how vulnerable communities will be impacted. The coastline maps will include impacts at the 2030, 2060 and 2100 time horizons. The Project Team will also use USGS's soon to be released [CoSMoS tool](#) for the Central Coast to characterize the 2100 extreme emissions trajectory scenario (H++ or 10 feet of SLR) in the context of adaptation strategy implementation's secondary consequences. These descriptions and maps will be complemented by the development of adaptive pathway visualizations to facilitate understanding of decision choices, tradeoffs, and triggers to enable robust decisions under uncertainty. The Project Team will consult with Coastal Commission staff in developing the draft and final Technical Reports; completion of Task 2 will achieve Objectives 1 and 2.

Outcomes/Deliverables:

- Draft and Final Urban Climate Adaptation Policy Implication and Response Strategy Evaluation Technical Report

Task 3: Community Engagement

The Project Team will build upon the foundational work of the City's recent award winning climate adaptation outreach campaign. Completion of Task 3 will achieve Objective 3.

Subtasks:

3.1: Design and Implement an Outreach and Engagement Plan – City staff on the Project Team were recently trained in an effective and inclusive public engagement method: *systematic development of informed consent and citizen participation by objectives*. The Project Team will use this framework and the *Climate Adaptation Outreach Plan* that was implemented in 2018 to design an inclusive and comprehensive outreach plan. The Project Team and PAG will competitively hire and work with a 3rd party climate adaptation communications facilitator to contribute to the *Outreach and Engagement Plan*, develop and

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conduct several outreach modalities to reach the public and stakeholders, including both residents and non-residents who visit, work or recreate at the coast, provide information needed to effectively gain their informed input, and circle back to the public to ground-truth a shared community vision for resilient management of beaches that will result from the entire engagement process.

We will hold two community workshops where a translator and translation headsets will be available for use by Spanish speakers, and we will use live cell phone polling to ascertain real time feedback (with alternatives available for those without cell phones). In community workshop 1, the Project Team and PAG will share the project scope, how we intend to gain feedback, and the findings from the Urban Climate Adaptation Policy Implication and Response Strategy Evaluation (Task 2). In community workshop 2, the Project Team and PAG will share outcomes of community engagement to ground-truth and refine the community vision for long term coastal management and how it will be integrated into the LCP Adaptation Policy Guidance (Task 4). We will also hold up to 6 focus groups targeting socially vulnerable community groups and residents, Beach Flats residents, Seabright residents, and environmental advocates and non-profits. We will coordinate with the West Cliff Plan project to ensure the same topics are addressed in that project's West Cliff Drive residents' focus group.

The Project Team will enlist its vast network of stakeholder organizations to plan, promote and recruit stakeholders to participate in outreach opportunities. There are two other key engagement strategies that will supplement data and input obtained from more traditional modes such as neighborhood workshops (including those specifically developed with and for vulnerable communities) and stakeholder focus groups.

3.2: Conduct Outreach through Academic Partnerships – The City will explore partnerships with higher education institutions to work with academic researchers, instructors and their students on various elements of the project. We are aware of academic anthropological research being conducted on coastal erosion using ethnographic fieldwork to examine community responses to coastal erosion and SLR in Santa Cruz. We anticipate some of this research could be coordinated with the project such that data collected informs the beach specific focus of this project. We also anticipate that local academic partnerships could be leveraged to enhance community engagement and in documenting coastal uses. We will also use our network of academic advisors to recruit a graduate student fellow to assist in the project execution.

3.3: Leverage a SLR Virtual Reality Mobile Phone Application for Broad Public Engagement – A second key feature of the engagement strategy is the use of an augmented and virtual reality (AR/VR) mobile phone application created in both Spanish and English. The base version of the AR/VR mobile phone application was developed as part of a City-tech startup (Virtual Planet Technologies, LLC) pilot project in early 2018 and includes depictions of the City's SLR impacts (erosion, rising tide and coastal storm flooding) from its SLR Vulnerability Assessment over the 2030, 2060 and 2100 time horizons for Santa Cruz's primary beaches. The base application version is currently under review by City leadership.

The Project Team will hire Virtual Planet Technologies, LLC, and in order to optimize the application's utility for the purpose of community engagement, the application will be modified to also depict historical shoreline locations (in addition to projected future

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shorelines) along with the impacts of implementing various adaptation strategies. For example, the application could include a scenario depicting what the beaches could look like with a new 6-ft sea wall or how a managed retreat policy could play out over time. The application will also include embedded notes and questions to facilitate learning about the City's challenges and opportunities with respect to SLR and to gain data on individual preferences for strategies.

The application will have both Spanish and English language versions and its use will be heavily promoted through various outlets in Santa Cruz. We expect this modality will reach thousands of residents and non-residents who visit, work, or recreate at the coast, drastically broadening the reach of the traditional engagement modalities. The application can and will be used beyond the life of the project.

3.4: Prepare Synthesis Summary of Outreach and Engagement: The project team will prepare a synthesis summary that discusses the outreach and engagement efforts undertaken.

Outcomes/Deliverables:

- Outreach and Engagement Plan
- Completion of 2 community workshops and up to 6 focus groups
- Development of SLR Virtual Reality Mobile Phone Application
- Synthesis Summary of Outreach and Engagement

Task 4: LCP Adaptation Policy Guidance

Based on the deliverables from Tasks 2 and 3, the Project Team will prepare an *Adaptation Policy Guidance* document to recommend policies and actions the City should undertake as part of the LCP update. This task will include a review of policy changes needed to achieve a more sustainable and equitable outcome for the coastline and our beaches. While these discussions will be occurring throughout the duration of the project with stakeholders and the Coastal Commission staff, the *Adaptation Policy Guidance* document will offer specific recommendations for incorporating this project's findings into the LCP, and it will be developed in coordination with the Coastal Commission staff. The guidance document will also include a policy map identifying and characterizing state and federal programs currently available to direct and fund adaptation policy and strategy implementation. Finally, the guidance document will include specific recommendations to align policies and strategies across planning documents (e.g., LCP, Local Hazard Mitigation Plan, General Plan Safety Element, and Beach Management Plan) and neighboring jurisdictions. Completion of Task 4 would achieve Objective 4.

Outcomes/Deliverables:

- Draft and Final Adaptation Policy Guidance document

Task 5: LCP Update

The City is currently in the process of updating the LCP to become a stand-alone document, to more closely conform to the format of the Coastal Act, and to update the LCP policies and Implementation Plan (formerly referred to as Implementation Program) to remove obsolete

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and completed policies and programs. The current update will also add new information and updated policies and programs, including broad policies related to SLR. It is anticipated that this amendment will be completed in late 2018/early 2019. This grant project will allow the City to expand upon the broad SLR policies in the current amendment, resulting in additional, more detailed hazard-related policies based on updated and more in-depth information related to SLR and a shared community vision. The grant will also assist the City in developing meaningful and actionable hazard-related implementation measures to be added to the LCP Implementation Plan.

Task 5 will consist of incorporating the information, policies, and programs developed in the *Adaptation Policy Guidance* from Task 4 into the LCP as a new LCP Amendment. Amendments will be made to Chapter 3, LCP Policies, in the form of a new section on coastal hazards and SLR. Amendments will also be made to Chapter 6, Implementation, related to the newly-added section. Completion of Task 5 will achieve Objective 5 and conclude the project.

Subtasks:

5.1: Coastal Commission and Public Consultations – The Project Team will work in consultation early and often with the Coastal Commission staff and the public throughout the life of the project to incorporate appropriate policies and programs related to SLR and coastal adaptation into the draft LCP Amendment. Completion of this task will be informed by each of the prior tasks but in particular include reviewing existing SLR information and policies within the LCP and updating and expanding pursuant to the specific recommendations contained within the *Adaptation Policy Guidance* document.

5.2: Final Outreach, Public Hearings, and Adoption of LCP Amendment – Upon completion of the Draft LCP Amendment as outlined in Subtask 5.1, the draft LCP Amendment with its new and updated policies and programs will be released in advance of and presented at a community workshop conducted by City staff whereby public comments will be considered for incorporation into a revised draft LCP Amendment. Coastal Commission staff will also be given adequate time (approximately one month) to review and provide comments on the Draft LCP Amendment, including coordination and review of draft policies prior to public release. The revised draft LCP Amendment will next be presented at public hearings to the Planning Commission for recommendation and to the City Council for adoption. Once adopted, the LCP Amendment will be submitted to the California Coastal Commission for certification. The Final LCP Amendment will be made available to the public online and at publicly accessible locations like the Library and other community centers.

Outcomes/Deliverables:

- Draft LCP Amendment
- Completion of community workshop
- Revised Draft LCP Amendment
- Planning Commission and City Council Hearings
- Final and Adopted LCP Amendment
- Submission of locally adopted LCP amendment to Coastal Commission

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c. SCHEDULE

Project start/end dates: 3/1/2019 or grant agreement execution date – 12/31/2020

Task 1 – Project Management, Administration, and Coordination	3/1/2019 – 12/31/2020
Outcomes/Deliverables: a. PAH Scope of Responsibility and Schedule b. Project Fact Sheet and Slide Deck c. Quarterly Invoices and Progress Reports	a. 4/30/2019 b. 6/19/2019 c. 12/31/2020
Task 2 – Urban Climate Adaptation Policy Implication and Response Strategy Evaluation	3/1/2019 – 12/31/2020
2.1 Policy and Strategy Analysis	5/1/2019 – 8/16/2019
2.2 Socially Vulnerable Populations Impact Analysis	8/19/2019 – 10/25/2019
2.3 Evaluation Synthesis Documentation	9/16/2019 – 1/31/2020
Outcomes/Deliverables: Draft (a) and Final (b) Urban Climate Adaptation Policy Implication and Response Strategy Evaluation Technical Report	a. 11/15/2019 b. 1/31/2020
Task 3 – Community Engagement	9/2/2019 – 5/29/2020
3.1 Design and Implement an Outreach and Engagement Plan	9/2/2019 – 11/15/2019
3.2 Conduct Outreach through Academic Partnerships	10/1/2019 – 5/29/2020
3.3 SLR VR Mobile Phone App.	10/1/2019 – 1/31/2020
3.4 Prepare Synthesis Summary of Outreach and Engagement	4/1/2020 – 5/29/2020
Outcomes/Deliverables: a. Outreach and Engagement Plan b. 2 Community workshops + 6 focus groups c. SLR VR Mobile Phone App d. Synthesis Summary of Outreach and Engagement	a. 11/15/2019 b. 4/1/2020 c. 1/31/2020 d. 5/29/2020
Task 4 – LCP Adaptation Policy Guidance	4/1/2020 – 7/1/2020
Outcomes/Deliverables: Draft (a) and Final (b) Adaptation Policy Guidance	a. 5/1/2020 b. 7/1/2020
Task 5 – LCP Update	3/1/2019 – 12/31/2020
5.1 Coastal Commission and Public Consultation; Development of Draft LCP Update	3/1/2019 – 12/31/2020
5.2. Final Outreach, Public Hearings, and Adoption of LCP Amendment	7/1/2020 – 12/31/2020

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Outcomes/Deliverables:	
a. Draft LCP Amendment	a. 9/9/2020
b. Community Workshop 3	b. 9/11/2020
c. Revised LCP Amendment	c. 10/21/2020
d. Planning Commission and City Council Hearings	d. 12/18/2020
e. Final Adopted LCP Amendment	e. 12/18/2020
f. Submittal of LCP Amendment to CCC	f. 12/31/2020

D. BENCHMARK SCHEDULE

ACTIVITY	COMPLETION DATE
City/Coastal Commission Staff Kickoff Meeting	4/30/2019
Final Urban Climate Adaptation Policy Implication & Response Strategy Evaluation Draft Technical Report	1/31/2020
SLR VR Mobile Phone App Completed	1/31/2020
Community Workshops 1 and 2 & Focus Groups Completed	4/1/2020
Synthesis Summary of Outreach and Engagement	5/29/2020
Final Adaptation Policy Guidance Document	7/1/2020
Draft LCP Amendment	9/9/2020
Community Workshop 3 Conducted	9/11/2020
Submittal of locally adopted LCP Amendment	12/31/2020