



COMMUNITY DEVELOPMENT AGENCY
PLANNING DIVISION

May 17, 2022

Thomas K. Lai
DIRECTOR

Honorable Board of Supervisors
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SUBJECT: Tomales Bay Living Shoreline Project, Briefing

Dear Supervisors:

SUMMARY:

The Community Development Agency (CDA) completed the Tomales Bay Living Shoreline Feasibility Project in January of this year. With a grant from the State Coastal Conservancy, the County contracted with Environmental Science Associates (ESA) to evaluate a range of living shoreline measures in Tomales Bay to determine the extent to which they can provide flood protection of habitat, public access, and shoreline development. Living shorelines such as eelgrass, oyster reefs, wetlands and other natural systems can provide services in adapting to climate change impacts, as well as sequester carbon. This study evaluated the feasibility of such adaptations at specific locations in Tomales Bay and ultimately selected two sites for development of conceptual design plans.

The final report explains the process the project team followed to select the two sites, including mapping of Tomales Bay habitats, identifying a range of living shorelines that can thrive in the bay, identifying potential sites for several types of living shorelines, and selected two sites for further conceptual development: Cypress Grove and Martinelli Park. The report and recordings from public meetings can be found on the County's website [here](#). An Executive Summary is included as Attachment 1.

BACKGROUND:

For several years, the Community Development Agency (CDA) led "Collaboration: Sea-Level Marin Adaptation Response Team" (C-SMART) to identify the County's vulnerability to sea level rise and develop adaptation solutions for West Marin. To date, C-SMART produced the **Marin Ocean Coast Sea Level Rise Vulnerability Assessment** (2016), the **Marin Ocean Coast Sea Level Rise Adaptation Report** (2018), the Stinson Beach Dune Study (2021), and the **Tomales Bay Living Shoreline Project**. The Vulnerability Assessment documents the exposure of Pacific coast communities in the County to sea-level rise based on coastal flooding and erosion hazard maps produced by the US Geological Survey (USGS) and ESA respectively. Four of those communities are located on the Tomales

Bay shoreline: Dillon Beach, East Shore, Point Reyes Station, and Inverness.

The C-SMART Vulnerability Assessment identifies significant risks to structures, roads, and habitat in and along Tomales Bay. The Adaptation Report identifies several conceptual adaptation alternatives along the Tomales Bay shoreline. It further outlines a process for community-scale sea level rise adaptation planning for West Marin’s coastal communities. Completing technical studies that assess the feasibility of applying natural adaptation measures in lieu of hard shoreline armoring is an important first step in community-scale sea level rise adaptation planning in the Tomales Bay area.

Why living shorelines? Living shorelines are shoreline alterations that are used to adapt to sea level rise by taking advantage of natural features and processes to protect the shoreline. The term living shoreline is used interchangeably with nature-based adaptation. Hard shoreline armoring can have adverse impacts on the marine and shoreline environment, and it can be very difficult to permit. In Tomales Bay, permits are required by both the California Coastal Commission and Greater Farrallones National Marine Sanctuary, among other resource agencies, which look more favorably on living shoreline projects.

DISCUSSION:

The goal of the project is to evaluate the feasibility of nature-based adaptations to protect the Tomales Bay shoreline from erosion and flooding as an alternative to traditional engineered methods (e.g. coastal armoring). Specific objectives within the overarching goal include:

- Provide flood and erosion protection to built and natural resources against future sea level rise,
- Maintain public access,
- Support vibrant recreational opportunities for users of all socioeconomic circumstances,
- Develop preliminary designs for shortlisted pilot projects, identified from a suite of candidate sites, and
- Extend living shoreline applicability for Tomales Bay by identifying feasible opportunities for living shorelines approaches.

The team identified 6 initial candidate sites within Tomales Bay. Sites were selected by creating a series of ‘overlay maps’ that compared existing site conditions, future flooding conditions with sea-level rise, and potentially suitable locations for adaptation measures. These 6 sites were evaluated further based on criteria that included future flooding and erosion risks, expected ecological benefits, public access and recreation benefits, longevity

of benefits, and cost and implementation considerations. Staff from the permitting agencies were consulted and provided further input.

Based on the results of the evaluation process, County staff selected two sites for design development: Cypress Grove on Tomales Bay’s eastern shore, and Martinelli Park on Bay’s western shore. The project team developed conceptual designs for both sites. The intent is that, following detailed design and permitting, these projects would be constructed to serve as pilot studies, to be monitored for effectiveness over time, with the opportunity to draw from these to help inform future adaptations elsewhere within Tomales Bay.

EQUITY IMPACT:

California’s beaches and shoreline areas are a source of low-cost recreation available to people of all income levels. Protecting them is a state priority that is reflected in Marin County’s Local Coastal Program and Countywide Plan. The Tomales Bay Living Shoreline Project, although technical in nature, provides one tool in the County’s efforts to protect shorelines from sea level rise so they are available for public use.

FISCAL IMPACT:

No Impact on the general fund, funds to accomplish these tasks were granted by the State Coastal Conservancy and were have been previously identified in CDA's budgets.

- REVIEWED BY:**
- County Administrator N/A
 - Department of Finance N/A
 - County Counsel N/A
 - Human Resources N/A

SIGNATURE:

APPROVED:

Leslie Lacko
Leslie Lacko,
Senior Planner

Attachments

1. Tomales Bay Living Shoreline Project, Executive Summary