



COMMUNITY DEVELOPMENT AGENCY  
PLANNING DIVISION

May 17, 2022

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Honorable Board of Supervisors  
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**SUBJECT:** Briefing on the Stinson Beach Nature-Based Adaptation Study

Dear Supervisors:

**SUMMARY:**

With a grant from the State Coastal Conservancy, the Community Development Agency (CDA) conducted a study to determine the feasibility of using nature-based adaptation, such as dune restoration and enhancement, to protect public and private assets from sea level rise at Stinson Beach. The study convened a cross disciplinary team of experts to assess the feasibility of a dune system as an alternative to coastal armoring. The project goals were to enhance existing habitats and public access, support vibrant recreational opportunities for users of all socioeconomic circumstances, and provide flood and erosion protection against existing coastal hazards and future sea level rise. CDA contracted with Environmental Science Associates to conduct the study, which was completed in September 2021. The final project report and recordings of public meetings can be found [here](#).

**BACKGROUND:**

In 2014, the Community Development Agency (CDA) commenced “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 has produced four major deliverables: the ***Marin Ocean Coast Sea Level Rise Vulnerability Assessment*** (2016), ***Marin Ocean Coast Sea Level Rise Adaptation Report*** (2018), and more recently, the ***Tomales Bay Living Shoreline Project*** and the ***Stinson Beach Nature-Based Adaptation Feasibility Study*** ((The Stinson Dune Study)(2021)). The Vulnerability Assessment documents the exposure of Pacific coast communities and resources 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.

The Vulnerability Assessment concluded that 200 to 400 of Stinson Beach’s homes may be exposed to flooding by 2030, potentially increasing to nearly 600 by the end of the century while beaches are vulnerable to “coastal squeeze” and may disappear by the end of the century or earlier. The Adaptation Report identifies several conceptual adaptation alternatives

along the Pacific shoreline of Stinson Beach including nature-based alternatives such as dune restoration that could have multiple benefits in providing habitat, recreation and flood protection. It further outlines a process for community-scale sea level rise adaptation planning for West Marin’s coastal communities.

**DISCUSSION:**

The Stinson Dune Study is a technical study that identifies several types of dune systems that are feasible in Stinson Beach and compares costs to “no project” and “hard shoreline armoring” alternatives. A copy of the Executive Summary is included as Attachment 1 and the presentation to the Board of Supervisors will describe the alternatives studied in the report. The Stinson Dune Study provides vital information for the first community-scale sea level rise adaptation planning project, which commences this year: the Stinson ARC, (Stinson Beach Adaptation and Resilience Collaboration). The Stinson ARC will anchor the development of long-term, implementable adaptation addressing critical infrastructure, natural resources, and community assets in the Stinson Beach area. The Stinson Dune Study and the ARC also pilot a community-scale adaptation planning process that will be valuable throughout Marin County.

**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 Stinson Dune Study, although technical in nature, provides one tool in the County’s efforts to protect beaches 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. Stinson Beach Nature-Based Adaptation Feasibility Study, Executive Summary