February 27, 2018

Marin County Board of Supervisors
3501 Civic Center Drive
San Rafael, CA 94903

SUBJECT: Collaboration: Sea Level Marin Adaptation Response Team Phase I Completion and Phase II commencement

Dear Supervisors,

RECOMMENDATION:

Staff recommends the Board: 1) Accept the Marin Ocean Coast Sea Level Rise Vulnerability Assessment and Marin Ocean Coast Sea Level Rise Adaptation Report; 2) Receive overview on C-SMART Phase II Work Program; and 3) Adopt Resolution of the Marin County Board of Supervisors Requesting Grant Funding from the Ocean Protection Council for a Feasibility Study for a Nature-based Green Infrastructure Project at Stinson Beach

SUMMARY:

Vulnerability Assessment and Adaptation Report
Climate experts estimate that by 2100, sea level could rise by up to 70 inches, and recent projections from the Ocean Protection Council include an end-of-the-century projection of 10 feet. Furthermore, the frequency, intensity and flood-effects of storms are anticipated to increase. A 2008 Governor's Executive Order states: "California must begin now to adapt and build our resiliency to coming climate changes through a thoughtful and sensible approach with local, regional, state and federal governments using the best available science."¹ To understand potential impacts of West Marin’s coastal hazards and prepare for a more resilient future, the Community Development Agency (CDA) launched Collaboration: Sea Level Marin Adaptation Response Team (C-SMART) in June 2014. Grant funding from the Ocean Protection Council and California Coastal Commission, matched by Marin County staff time supported two major Phase I deliverables: Marin Ocean Coast Sea Level Rise Vulnerability Assessment and Marin Ocean Coast Sea Level Rise Adaptation Report.

The draft Vulnerability Assessment was presented to the Board of Supervisors on November 17, 2015 and identified vulnerabilities of different asset types (parcels and

buildings, transportation, utilities, working lands, natural resources, recreation, emergency services, and historic and archaeological resources) and community-scale vulnerabilities for Muir Beach, Stinson Beach, Bolinas, Inverness, East Shore, Point Reyes Station, and Dillon Beach. In summary, the document concluded that around 1,300 parcels, 1,100 buildings, 20 miles of roads, 1,800 acres of wetlands, and numerous other assets could be exposed to sea level rise and storms by 2100.

Since the Vulnerability Assessment completion, CDA staff have worked with local residents and a variety of agencies and technical experts on developing adaptation strategies. The draft Adaptation Report is the result of that effort. The Adaptation Report is not a plan, but rather an informational document compiling adaptation options proposed to date to set the foundation for continued planning in West Marin.

The draft Adaptation Report was presented to the Board of Supervisors on August 1, 2017. The Adaptation Report is broken into sections addressing the same eight asset types and seven West Marin communities as the Vulnerability Assessment. The Report presents options for increasing community resiliency in the face of increased sea level rise and coastal storms. Identifying adaptation solutions that would be most appropriate in each location will require continued collaboration with stakeholders and technical experts, as part of an ongoing adaptive management approach.

As discussed in the report, possible adaptation approaches include protecting existing homes, businesses and other assets through building elevation, floodproofing, and nature-based strategies in the near to medium term. The Adaptation Report is not however, intended to facilitate new development in hazardous areas. Community-wide solutions such as elevating/armorining roads and developing new wastewater treatment systems are discussed for the near- to long-term, depending on location.

C-SMART Phase II Work Program and Grant Funding
Upon acceptance of the Vulnerability Assessment and Adaptation Report, staff propose to launch C-SMART Phase II. To solicit stakeholder input on next steps, staff circulated the West Marin Sea Level Rise Adaptation Plan Passport at recent public workshops and online. The 83 responses provided staff with valuable insight to inform a work program.

Based on Passport responses, discussions with the C-SMART Executive Steering Committee, comprised of Supervisors Rodoni and Sears, staff in other Marin County departments, and case study research, staff have drafted a Phase II work program (attached). The following tasks are included in this work program:

- A Homeowner’s Guide to Sea Level Rise. Content would include technical information on building elevation, floodproofing, etc., as well as the regulatory system and funding opportunities. Along with retrofitting workshops, these documents could help residents and business owners prepare for increased flooding, while increasing Marin County’s Community Rating System points, thus reducing flood insurance premiums.
- Evaluation of land use, zoning, and legal consideration with adaptation, as well as Draft Capital Improvement Guidance for roadway repair and maintenance that considers sea level rise. Both of these tasks would be in conjunction with Marin’s Bayside adaptation program, Bay Waterfront Adaptation Vulnerability Evaluation (BayWAVE).

- Stinson Beach Plan for Adapting to Coastal Hazards. A recommendation of the Adaptation Report is smaller scale community scale planning, through a framework called a Community Plan for Adapting to Coastal Hazards (PATCH). This would build upon CDA’s long history of community engagement and bring local residents together with technical experts to evaluate alternative adaptation options.

While the Adaptation Report provides a number of options for increasing the resiliency of various assets, a Stinson Beach PATCH would present alternative approaches to adaptation that could be phased and fit together to produce the best long-term response to rising seas. As discussed below, the PATCH will include feasibility studies for various adaptation alternatives that could set a foundation for subsequent phases with engineering studies for the preferred alternative(s).

Home retrofitting strategies such as elevation could be implemented by property owners in the near term. Alternatives such as road elevation and dune restoration also merit consideration as larger scale approaches to increase community resiliency.

Feasibility Studies are necessary early steps in assessing the adaptation alternatives. Environmental impacts, social impacts, regulatory constraints, effectiveness, and necessary resources would be discussed. In addition, a funding memo would be developed which outlines adaptation financing mechanisms, including options that would require community buy-in such as local assessment districts and bonds. Thus financial experts would be critical to an interdisciplinary team. CDA will be working with the County Administrator’s Office on potential funding to support a more in-depth engineering and financing feasibility analysis of the potential alternatives.

Dune creation has less impact to beach ecology than coastal armoring such as seawalls, and thus would be easier to permit under California Coastal Commission and Greater Farallones National Marine Sanctuary policies. Thus CDA is seeking approval by your board to request $250,000 of grant funding from the California Ocean Protection Council to support a Feasibility Study of a Nature-based Green Infrastructure Project at Stinson Beach. This grant application follows the grant request your Board approved on January 30, 2018. The goal of this study would be to assess the feasibility of a nature-based “green infrastructure” project at Stinson Beach to develop a resilient beach and dune ecosystem that enhances existing habitats and public access, supports vibrant recreational opportunities for users of all socioeconomic circumstances, and provides flood and erosion protection against existing coastal hazards and future sea level rise. Funding for adaptation on California’s open coast is quite limited. This grant program is
thus an important opportunity to support a much-needed ocean-oriented project, which could serve as a model for other coastal communities throughout the state and elsewhere.

- East Shore Plan for Adapting to Coastal Hazards. East Shore faces vulnerabilities from Tomales Bay’s rising waters. Over 150 buildings are exposed including local businesses which support West Marin’s tourism economy, and waterfront homes whose owners are concerned by escalating FEMA flood insurance costs. Property owners have stated that their homes’ bulkheads serve as armoring to protect Shoreline Highway, a state roadway which parallels Tomales Bay. CDA staff have recently consulted with Caltrans staff who have offered to participate in community discussions on road adaptations necessary to maintain the continued use and function of Shoreline Highway. Thus CDA staff would like to serve as conveners in bringing community members together with Caltrans to better define the issue and necessary next steps. Such a collaboration could help position the community for future grants to further assess the bulkheads, develop adaptation alternatives for Shoreline Highway and/or elevate East Shore homes above the water.

FISCAL/STAFFING IMPACT:

C-SMART is identified as an initiative in CDA’s Performance Plan, and funding is available in CDA’s budget for this initiative in the current fiscal year. CDA will work with the County Administrator’s Office to identify funding options in FY 2018-19.

REVIEWED BY: (These boxes must be checked)

[ ] Department of Finance [X] N/A
[ ] County Counsel [X] N/A
[ ] Human Resources [X] N/A

SIGNATURE:

Alex Westhoff
Planner

Reviewed by:

Brian C. Crawford
Director

Attachments:
1. Marin Ocean Coast Sea Level Rise Vulnerability Assessment (online)
2. Marin Ocean Coast Sea Level Rise Adaptation Report (online)  

3. Collaboration Sea-Level Marin Adaptation Response Team Phase II Work Program

4. Resolution of the Marin County Board of Supervisors Requesting Grant Funding from the Ocean Protection Council for a Feasibility Study for a Nature-based Green Infrastructure Project at Stinson Beach