
REPORT TO GENERAL PLAN 2040 STEERING COMMITTEE

Subject: Updated Sea Level Rise Policies and Programs

EXECUTIVE SUMMARY

Staff is preparing a Sea Level Rise “Adaptation Report” as part of General Plan 2040, along with policies and programs on this topic. The Steering Committee reviewed an early draft of the policies and programs earlier in 2019 as part of its discussion of the Draft Environmental Hazards (Safety) Element. Over the last few months, staff has refined the policies, taking into consideration feedback from Committee members, research on the topic (including best practices), and consultation with other communities and practitioners. The Draft policies and programs will be presented at the September 11 meeting, with an opportunity for Steering Committee comment and discussion.

REPORT

As the Steering Committee is aware, large areas of San Rafael are at risk of tidal flooding. The extent of these areas will grow by 2040 due to sea level rise—and grow even more during the second half of the 21st Century. This issue has been discussed at length with the Steering Committee during prior meetings. We are addressing sea level rise throughout General Plan 2040, primarily in the Environmental Hazards Element, but also in the Land Use, Transportation, Infrastructure, Housing, and Conservation Elements. Staff is also preparing an “Adaptation Report” that will accompany General Plan 2040 as a Technical Appendix.

At the meeting on September 11, we will present an updated set of policies and programs that address this topic, and solicit Steering Committee feedback. Committee members are encouraged to review the document on the following pages in advance of the meeting.

GENERAL PLAN 2040 DRAFT GOALS, POLICIES AND PROGRAMS – INCREASED FLOODING & SEA LEVEL RISE

GOAL EH-#: ADDRESS INCREASED FLOODING AND SEA LEVEL RISE:

It is the goal of the City of San Rafael to recognize, plan for and successfully adapt to the anticipated effects of increased flooding and sea level rise.

San Rafael's natural geography contains expansive low-lying areas that were once mudflats, tidal marshes and bay lands. Much of this low-lying area has been filled and developed. These developed areas, which include residential neighborhoods, the largest concentration of light industrial and commercial businesses in Marin County, utility services and infrastructure, and a major transportation network (including US 101 and I-580), are vulnerable to increased flooding and sea level rise attributed to climate change. It is critical to promote awareness of this trend and plan for future adaptation in these areas.

Sea level rise is a predicted phenomenon that is subject to everchanging information and data. Nonetheless, San Rafael has benefitted from a number of actions and activities that have focused on increased flooding and sea level rise, and there is an abundance of resources available for planning. In 2014, the City of San Rafael released "*Climate Adaptation – Sea Level Rise, San Rafael, CA White Paper*," which initiated a discussion of this topic and its potential impacts on San Rafael. This white paper broadly summarized areas of vulnerability, adaptation measures and potential opportunity areas for adaptation.

In coordination with the Marin cities and towns along the bay front shoreline, in 2017 the County of Marin completed and released the *Bay Waterfront Adaptation & Vulnerability Evaluation* (BayWAVE). BayWAVE presents the first, in-depth review and profile of the bay front communities and their vulnerable assets including land, buildings, transportation, utilities natural resources, recreation facilities, emergency facilities and cultural resources. BayWAVE presents sea level rise estimates for near-term (2030), mid-term (2050) and long-term (2100). The modeling tools used for BayWAVE is from the National Oceanic and Atmospheric Administration's (NOAA) Sea Level Rise Viewer and the USGS Coastal Storm Modeling Systems (CosSMos), which can be viewed through the Our Coast Our Future (OCOF) website. The modeling tool uses an elevation datum of mean higher high water (MHHW). For consistency, it is prudent to use BayWAVE as the base for assessing and planning for increased flooding and sea level rise in the San Rafael Planning Area.

The *San Rafael Climate Change Action Plan 2030* (CCAP 2030) Measure CA-C4 (Sea Level Rise) recommends that the City prepare for and adapt to sea level rise. The Sea Level Adaptation Report has been prepared and is included in General Plan 2040 Appendix __. This adaptation report compiles valuable information, reports and actions that have been completed or pursued to date that are pertinent to San Rafael. Further, the adaptation report provides the first step in identifying adaptation measures that are appropriate for San Rafael as well as opportunity areas for adaptation.

Policy SLR-1: Sea Level Rise Prediction Map.

Utilize Exhibit ____ (Sea Level Rise Prediction Map) as a tool for addressing increased flooding and sea level rise to: a) maximize public awareness and disclosure to property owners and the public; b) assess and address impacts to future development; c) establish a zoning map “overlay zone” and building code requirements for future planning and adaptation; d) plan opportunity areas for adaptation; and e) fund and finance short-term and long-term adaptation projects.

Program SLR-1A: Incorporate into City GIS. *Incorporate the Sea Level Rise Prediction Map into the City’s Geographic Information System (GIS) map and utilize GIS as a tool for tracking increased flooding and sea level rise and make available to the public.*

Program SLR-1B: Periodic Update of Sea Level Rise Prediction Map. *Review sea level rise overlay prediction map every five (5) years to determine if it needs updating or amending based on changing information on predictions and best available science.*

Program SLR-1C: Sea Level Rise Overlay Zone. *Adopt an “overlay zone” on the City Zoning Map utilizing the Sea Level Rise Prediction Map. The “overlay zone” shall include land use regulations for site planning and a minimum construction elevation to adapt to and accommodate for increased flooding and sea level rise.*

See also Programs SLR-5A and SLR-6C

Policy SLR-2: Maintain Current and Consistent Information and Data

Ensure that the information and data related to increased flooding and sea level rise is current and consistent with the information and data utilized by the County of Marin.

Program SLR-2A: Coordination with County of Marin. *Coordinate with the County of Marin on updating data and everchanging information related to increased flooding and sea level rise. For consistency with the County database, utilize the County of Marin Bay Waterfront Adaptation & Vulnerability Evaluation (BayWAVE) as the base for all City-prepared documents and plans addressing and adapting to increased flooding and sea level rise.*

Policy SLR-3: Awareness and Disclosure

Maximize awareness and disclosure by providing information to property owners and the public on areas subject to increased flooding and vulnerable to sea level rise.

Program SLR-3A: Residential Building Resale (RBR) Reports. *Revise the RBR Report template to include a disclosure of potential property risk to increased flooding and sea level rise. Utilize the sea level rise prediction map for confirming property vulnerability and disclosure.*

Policy SLR-4: Increased Flooding and Sea Level Rise Impacts. Consider and address increased flooding and sea level rise impacts in areas vulnerable to risk shown on Exhibit ____ (Sea Level Rise Prediction Map) in development and capital projects.

Program SLR-4A: Development Projects. *Require new development, redevelopment projects, and substantial additions to existing development to consider and address increased flooding and sea level rise impacts.*

Program SLR-4B: Capital Projects. *Prepare a guidance document for addressing increased flooding and sea level rise impacts and adaptation measures into the City's capital projects and planning process. Require that sea level rise be addressed in capital project planning. If the life of the public improvements extends beyond 2050, accommodate and incorporate adaptation measures.*

Program SLR-4C: Coordination with Utilities and Services. *Coordinate with the utilities and services that have infrastructure and facilities in vulnerable areas to ensure that sea level rise information and goals are consistent with the City's goals, and that infrastructure/utilities projects address and plan for increased flooding and sea level rise.*

Policy SLR-5: Elevate - Minimum Construction Elevation

Ensure that new development, redevelopment projects and substantial additions to existing development to meet a minimum required construction elevation to accommodate increased flooding and potential sea level rise.

Program SLR-5A: Minimum Construction Elevation. Update and adopt zoning, building and public works code requirements to establish and mandate a minimum finished floor elevation for new development, redevelopment and substantial additions to existing development. Consider adopting a minimum, finished floor elevation requirement of +__ feet (Note: + 3 feet has been required in several other bayfront communities) above the FEMA 100-year flood elevation requirement.

Policy SLR-6: Sea Level Rise Adaptation. Proactively pursue planning for and implementation of adaptation for increased flooding and sea level rise risk.

Program SLR-6.A: Sea Level Rise Adaptation Plan. *Prepare and adopt an adaptation plan for addressing increased flooding and sea level rise. The adaptation plan shall include the following components:*

- *Utilize the sea level rise prediction map as a base for adaptation planning.*
- *A "menu" of adaptation measures and approaches that would include, but not be limited to: elevate; managed retreat; nature-based adaptation measures such as habitat/wetland restoration, living shorelines and horizontal levees; hard line armoring such as sea walls, levees and breakwaters; and locking systems.*

- *Coordination with local, county, state, regional and federal agencies with bay and shoreline oversight, major property owners, and owners of critical infrastructure and facilities in the preparation of the adaptation plan.*
- *An outreach plan to major stakeholders and property owners within the vulnerable areas.*
- *An inventory of potential areas and sites suitable for mid- to large-scale adaptation projects. Utilize the Sea Level Rise Adaptation Report presented in General Plan 2040 Appendix ___ as a base for confirming and formalizing opportunity areas for adaptation projects.*
- *Maximizing opportunities for retreat where practical and feasible. Prioritize retreat on low-lying, undeveloped and underdeveloped sites, in areas that are permanent open space, and in areas that are environmentally-constrained.*
- *Encouraging innovative green shoreline protection measures (nature-based measures) such as retreat, wetlands and habitat restoration, and outboard horizontal levees where most practical and feasible.*
- *Encouraging hard line armoring measures (sea walls and levees) in densely developed areas to minimize the potential for displacement of permanent residents and businesses.*
- *Identifying the appropriate timing and “phasing” of adaptation planning and implementation.*
- *Identifying financing tools and opportunities.*
- *Coordinate with and/or incorporate the adaptation plan into the City of San Rafael Local Hazard Mitigation Plan.*

Program STR-6.B: Resilience and Adaptation Measures. *Where feasible and practical, require new development, redevelopment projects and substantial additions to existing development to integrate resilience and adaption measures into project designs.*

Program STR-6.C: Cluster Development. *On large, undeveloped and underdeveloped sites located in areas of increased flooding and sea level rise risk, require that new development be clustered to minimize fill and maximize opportunities for adaptation.*

Program SLR-6.D: Financing and Funding. *Pursue financing and funding opportunities to fund short-term and long-term adaptation projects. Funding tools and opportunities would include, among others tax or bond measures, assessment districts, hazard abatement districts and grants.*

Program SLR-6.E: Partnerships. *Foster, facilitate and coordinate partnerships with the County of Marin, other effected agencies and utilities, property owners, and neighborhood groups/organizations on planning for and implementing adaptation projects.*