

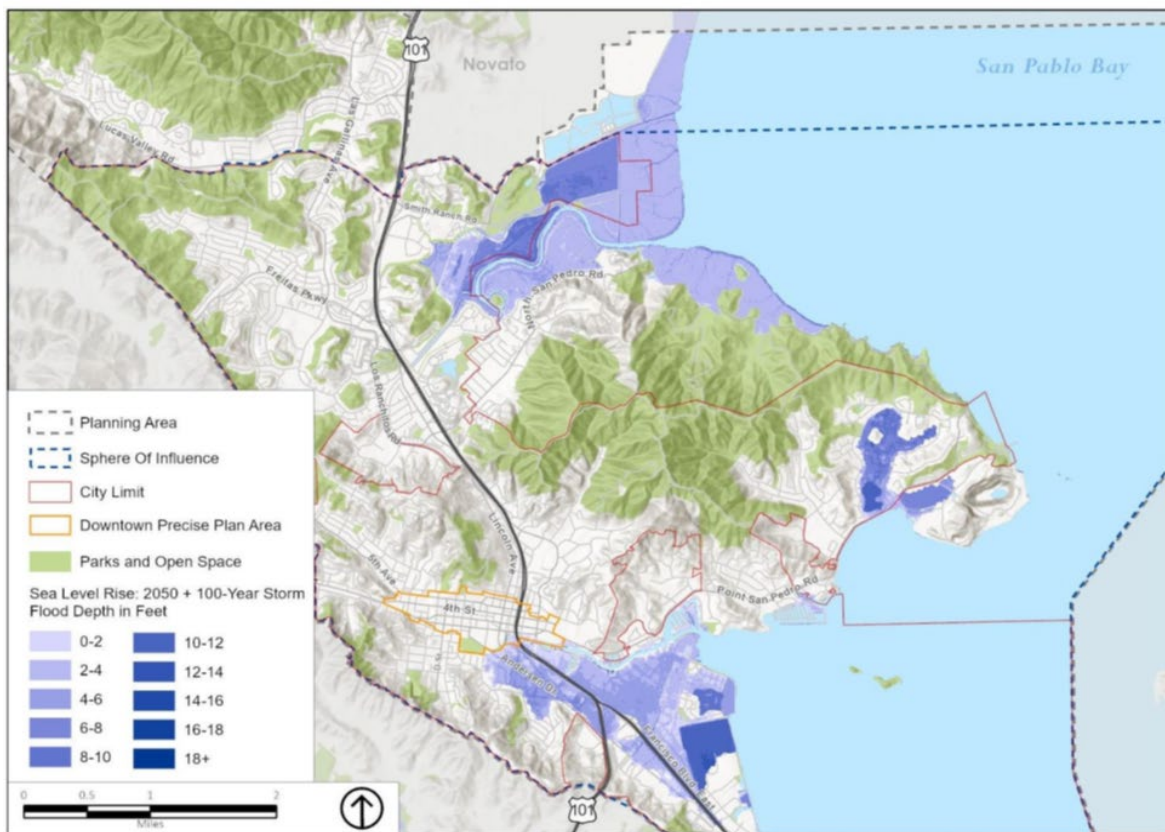


**BACKGROUND:**

**Flooding History & Sea Level Rise**

Flooding and inundation along the San Francisco Bay and San Pablo Bay shorelines is considered a major hazard throughout the County of Marin, and flooding occurs in these areas due to the high tides and heavy rainfall. There are many low-lying, shoreline areas in San Rafael that were historically marshlands and tidal flats, which were filled in for development. Between 1950 and 2016, Marin County experienced 19 flood events that have been declared federal and/or state disasters. Consequently, large areas within the San Rafael Planning area are subject to mandatory flood insurance required by the Federal Emergency Management Agency (FEMA).

With climate change, it is predicted that sea levels will rise, and flooding will continue to increase. Sea levels have risen an average of eight (8) inches globally in the last century and are projected to rise an additional 40-55 inches by 2100. Sea level rise combined with tidal surges from storm events and/or King Tides has the potential to impact shorelines, coastal communities, and coast side habitats. San Rafael contains many low-lying and shoreline areas that are vulnerable to significant impacts from continued flooding, increased storm surges and sea level rise. In San Rafael, assets that are at-risk include numerous neighborhoods such as: a) the Southeast San Rafael/Canal area which includes a large, densely-populated residential neighborhood of low-income residents, and the highest concentration of businesses serving Marin County, major utilities and public services, and a major transportation network (including US 101 and I-580); b) the San Pedro Peninsula/Pt. San Pedro Road; c) large portions of the Gallinas Creek Basin in North San Rafael; and d) low-lying areas of Downtown near San Rafael and Mahon Creeks.



Source: City of San Rafael, 2019; CoSMoS, 2016; County of Marin, 2009; ESRI, 2017; PlaceWorks, 2019.

**Climate Adaptation – Sea Level Rise White Paper (2014)**

In 2014, the Community Development Department prepared a [white paper](#) on sea level rise. The intent of the white paper was to catalogue the studies and information available at that time to serve as a resource for future adaptation planning efforts related to sea level rise and flood impacts. It included information about agencies and organizations involved in and supporting these efforts, as well as funding opportunities, resources, and available tools. The white paper provides a list of potential next steps for the City to take, including preparing a sea level vulnerability assessment. It also included two appendices: Appendix A- an inventory of San Rafael Levees and Shorelines; and Appendix B- Possible Opportunity Areas for Adaptation.

**BayWAVE Project – Marin Shoreline Sea Level Rise Vulnerability Assessment (2017)**

In 2017, in partnership with local jurisdictions (including San Rafael), the County of Marin completed and released the Marin Shoreline Sea Level Rise Vulnerability Assessment: Bay Waterfront Adaptation & Vulnerability Evaluation ([BayWAVE](#)). This multi-jurisdictional vulnerability assessment covers the eastern Marin shoreline from the Golden Gate Bridge to the county line north of Novato. The goal of the BayWAVE project has been to increase awareness and prepare for future sea level rise impacts. This vulnerability assessment is an informational document that includes the following:

1. It catalogs impacts using six different projection scenarios across the entire bay shoreline (from a projected 10-inch rise to 60-inch rise inclusive of a 100-year storm surge) to 2030. The model that is used to project inland inundation from the sea level rise scenarios is the CoSMoS model from the US Geological Survey available at the [Our Coast Our Future](#) website.
2. It presents profiles for key assets within vulnerable areas. The asset profiles inventory parcels and buildings, transportation networks, utilities, working lands, natural resources, recreational assets, emergency services, and cultural resources. A profile has been developed for the vulnerable areas within each local jurisdiction/municipality along the bay front. For San Rafael, in the near-term, 449 acres could be exposed to tidal flooding. By the long-term, 1,856 acres could be exposed to sea level rise, and 2,121 acres could be exposed during a 100-year storm surge.

The BayWAVE vulnerability assessment is comprehensive and is an excellent resource. In addition to providing a detailed inventory and profile of assets, the document provides a base for monitoring and future planning for sea level rise. The City will continue to tier from BayWAVE as a foundation for sea level rise planning and adaptation by utilizing the same sea level rise model and projection scenarios; this will facilitate continuity and consistency, and will reinforce future partnering with the County and other neighboring jurisdictions.

The County of Marin pursued a second phase of the BayWAVE project by completing a land use planning guidance in early 2020. [Adaptation Land Use Planning: Guidance for Marin County Local Governments](#) (2020) explores appropriate adaptation land use planning measures for Marin County's bay shoreline based on the BayWAVE Vulnerability Assessment and other research. The guidance presents a range of land use planning tools suitable for local conditions and environment including adaptation measures, regulatory/zoning approaches, taxing methods, and market-based measures for financing adaptation.

**Climate Change Action Plan 2030 (2019)**

In 2019, the City Council adopted the Climate Change Action Plan 2030 (CCAP 2030). CCAP 2030 acknowledges the need to address and adapt to sea level rise in two implementing programs. First, Program SA-C4 calls for preparing and adapting to sea level rise by taking specific actions such as, among others: a) developing a guidance document for incorporating sea level rise into the City's capital planning process; and b) studying the creation of an overlay zone that would establish standards for developing in areas subject to flooding from sea level rise. Second, Program SA-C5 recommends

pursuing climate change adaptation through measures such as incorporating sea level rise in the City's Local Hazard Mitigation Plan (2018).

**General Plan 2040 (2020)**

The [Draft San Rafael General Plan 2040](#) is completed and has been released for public review. Following the recommendations of the CCAP 2030 and utilizing the BayWAVE Vulnerability Assessment as a foundation, the Safety Element of the draft General Plan 2040 includes a new goal, Goal S-3, that is specific to addressing and planning for increased flooding and sea level rise resilience. As presented in Attachment 1 (Safety Element Sea Level Rise Policies & Programs), seven policies and 16 programs are recommended to address flooding and sea level rise with focus on: a) awareness and disclosure; b) establishing a framework for regulations; and c) preparing for adaptation planning. More specifically, they include the following:

1. Sea Level Rise Projection Map. Maintaining, utilizing, and periodically updating a Sea Level Rise Projection Map. This map can be used: a) as a resource for public awareness and disclosure; b) to address impacts to future development; c) as a base for establishing an "overlay zone;" d) to identify planned opportunity areas for adaptation; and e) to inform funding and financing decisions for short-term and long-term adaptation projects. Program S.3-1B recommends that sea level rise data be reviewed every five years to determine the need for updates to the Sea Level Rise Projection Map.
2. Assess Sea Level Rise Impacts. Address increased flooding and sea level rise impacts when reviewing development projects and reviewing and funding capital projects. New development and capital projects should incorporate resiliency and adaptation measures into project design.
3. Minimum Construction Elevation. Establishing a minimum, required construction elevation for new development, redevelopment, and substantial additions. Program S-3.5A recommends adopting City code provisions that would increase the required, minimum finished floor elevation three (3) feet above the FEMA 100-year flood elevation requirement. This code provision would be applied to areas prone to sea level rise.
4. Shoreline Levee System. Improve and expand the shoreline levee system. Program S-3.7A recommends that the existing levees, berms, and flood control systems be assessed to identify reaches with the greatest vulnerability, and that levee improvement plans be developed. Program S-3.7B addresses the coordination of and seeking financing for levee improvements.
5. Sea Level Rise Adaptation Plan. Program S-3.6A recommends that a Sea Level Rise Adaptation Plan be prepared and adopted. This program recommends that the plan be developed in coordination with the County and major stakeholders employing a community outreach approach. The plan is to include an inventory of potential sites and areas suitable for adaptation, a menu of adaptation measures and approaches, and financing measures to fund implementation. Programs S-3.6B and S-6.3C call for fostering partnerships with the County of Marin and other stakeholders, as well as working with the County to facilitate the formation of a Countywide Agency/Joint Powers Authority to oversee adaptation planning, financing and implementation. While it is prudent for the City to develop its own adaptation plan, planning and adapting to sea level rise is a countywide challenge that will require countywide coordination, management, and oversight.

The following is a summary of two supportive documents that have been prepared to reinforce the importance of an adaptation plan, and to provide initial guidance for developing and adopting the plan. Both documents are appended to the Draft General Plan 2040.

**Flood Risk & Sea Level Rise Adaptation Report (2020)**

Since the 2014 release of the Sea Level Rise White Paper, information and data on sea level rise has become more abundant and expansive. One of the more currently developed resources for the San Francisco Bay region is the [Adapting to Rising Tides Bay Area: Operational Landscape Unit Local Assessments](#), which includes an assessment of San Rafael. Building off the more current resources and utilizing the BayWAVE Vulnerability Assessment as a foundation, City staff has prepared the [Flood Risk & Sea Level Rise Adaptation Report](#). The purpose of this report is to “set the stage” in providing initial guidance on how an adaptation plan is to be developed and what is to be included in the plan. The report presents the following suggestions for developing an adaptation plan:

1. **Establish clear objectives.** The California Adaptation Planning Guide (APG) includes a list of best practices for developing objectives for an adaptation plan. This guidance recommends a community-based approach to developing an adaptation plan so as to: a) address equity, engagement and education; b) determine the phasing of adaptation implementation (short-term to long-term); c) identify adaptation measures that are appropriate for the community conditions; and d) identify measures that have multiple benefits. Regarding the latter, the adaptation plan may be structured to address an “all hazard” approach as planning for increased flooding and sea level rise may also need to consider an increase in extreme heat days so that adaptation opportunities are not missed. For this reason, a plan for sea level rise adaptation should be coordinated with or incorporated into the adopted San Rafael Local Hazard Mitigation Plan (2018).
2. **Utilize Adaptation Land Use Planning – Guidance for Marin County Local Governments.** As discussed above, this Guidance identifies a range of land use planning tools.
3. **Identify policy and regulatory measures.** Some of these measures, such as adopting a sea level rise overlay zone and a minimum construction elevation are recommended in the Draft General Plan 2040 policies and programs (see Attachment 1).
4. **Identify the appropriate adaptation tools and strategies.** The report includes a menu of strategies that may be appropriate for San Rafael’s conditions and challenges. These strategies include nature-based measures (e.g., ecotone levees, retreat to tidal marsh, creek-to-bay lands restoration) and grey infrastructure (e.g., engineered barriers, levees, and elevating development).
5. **Identify financing measures and funding sources for implementation.** The report lists numerous financing measures such as developing a special tax (e.g., Measure AA – San Francisco Bay Clean Water, Pollution Prevention, and Habitat Restoration Measure, \$12/year parcel tax) and establishing a Geologic Hazard Abatement District (GHAD).

The report includes suggestions for pursuing the “next steps” in developing an adaptation plan. The adaptation plan is required to be developed in accordance with the SB 379 legislation, which requires local jurisdictions follow the California Adaptation Planning Guide (APG), which outlines a four-phased step-by-step planning process.

**San Rafael Sea Level Rise Adaptation Technical Guidance Study – ESA (2020)**

In February 2019, the Department of Public Works retained Environmental Science Associates (ESA) to develop a [sea level rise adaptation technical guidance study](#) with the following objectives:

1. Assess existing flood risk and flood risk that includes future sea level rise projections;
2. Develop reasonable and feasible sea level rise adaptations appropriate to the City’s shoreline;

3. Evaluate adaptation measures to characterize the measures' cost and benefits; and
4. Integrate recommended measures into a phased adaptation plan to guide implementation.

This technical guidance study advances the BayWAVE mapping by providing vulnerability information at a more granular City scale and recommending City-specific adaptation measures to address flood hazards.

The study considered a range of citywide and region-specific focus areas and adaptation measures. The three citywide focus areas each require long-term planning and future studies. This included the San Rafael Creek (Canal), the citywide zoning plans with respect to sea-level rise, and the City's pump stations:

- The Canal is a significant source of flood vulnerability for both the Canal neighborhood and Downtown. Addressing this vulnerability is complicated by private ownership of its shoreline. The study identifies flood barriers and raising parts of the shoreline as possible long-term adaptations whose feasibility should be further studied.
- The study supports the City's inclusion of sea-level rise overlay maps to assist with zoning, which would identify properties along the shoreline that are especially vulnerable.
- Many of the City's pump stations are both located in and pump water from low-lying areas along the shoreline that face greater flood hazard due to sea-level rise. The City should develop a protocol for assessing pump station capacity to meet performance criteria in the face of climate change.

The study divided the shoreline into seven geographic regions, such that each region faces similar flood vulnerabilities. Within each region, focus areas were identified with specific flood vulnerabilities. The study considered aspects of vulnerability such as causes of flooding, size of area affected, timeframe for flood vulnerability, land ownership, and effects on evacuation routes. Furthermore, the study identifies adaptation measures for focus areas that range from short-term to long-term projects.

## **ANALYSIS:**

### **Consistency with San Rafael General Plan**

The adaptation report and the technical guidance study have been prepared as supportive documents to the Draft General Plan 2040. The scope, approach and content of these documents are consistent with and support the Draft General Plan 2040 policies and programs presented in Attachment 1 of this report. Further, these documents are consistent with the policies of the current General Plan 2020 (Sustainability Element Policy S-15, Adapting to Climate Change; Program SU-15a Vulnerability Assessment; and Program SU-15d Sea Level Monitoring and Planning) and the Climate Change Action Plan 2030 (Program SA-C4, Sea Level Rise and Program SA-C5, Climate Change Adaptation).

The technical guidance study places flood vulnerability of the City's shoreline within the context of the most recent State projections and guidance on sea-level rise from 2018. The study also builds on prior City, County, and State level efforts that identified areas vulnerable to sea-level rise, including the City's 2014 white paper, Countywide BayWAVE study, and the most recent FEMA coastal flood mapping from 2016. Near-term flood vulnerabilities were investigated with site visits, new shoreline topographic surveys, and coordination with the City's Public Works Department to identify the most vulnerable locations. In addition to identifying vulnerabilities, the study recommends a range of adaptation measures, provides order-of-magnitude cost estimates for implementation, and lists possible funding sources.

Given the length of the City's shoreline, flood vulnerabilities differed throughout the City. Areas directly adjacent to the Bay are more vulnerable to coastal flooding from high tides and wave runup during storms, while farther inland areas (Canal-adjacent neighborhoods and Las Gallinas) are vulnerable to high tides and watershed runoff. The technical guidance study identifies a number of short-term projects that could be addressed with Capital Improvement Project (CIP) funding. Three citywide studies would address the feasibility of long-term adaptation for the Canal, guidance for supporting a sea level rise overlay to the City's zoning map, and the protocols for assessing pump station capacity with climate change. Other short-term projects include retrofitting stormwater outfalls which currently allow high tides to back up into the storm drain network in residential and commercial areas, already causing annual nuisance flooding. Longer-term projects include raising parts of the City's shoreline levees that are not FEMA-accredited, replacing or upgrading tide gates, studying upgrades to the City's pumps, and including sea-level rise vulnerabilities in zoning.

In areas with adjacent wetlands (Spinnaker Marsh, Canalways, Pt San Pedro, Loch Lomond), these projects could be combined with wetland restorations, giving an opportunity to build interior levees while at the same time restoring habitats. This combined approach could unlock funding sources associated with restoration and public access improvements (e.g. Measure AA). As discussed below, the City is currently collaborating on a combined restoration and flood protection project at Tiscornia Marsh near the mouth of the San Rafael Canal.

### **Recent Related Actions & Reports**

At present, there are a number of actions and activities related to sea level rise that are timely and worthy of mention. While these actions and activities are not directly related to one another, each reinforces San Rafael's timely need to address this challenge and pursue opportunities to plan for sea level rise adaptation. A summary of these related actions and activities is provided below.

1. Priority Development Areas. This summer, the Metropolitan Transportation Commission (MTC) approved the City's nomination to establish two, new Priority Development Areas (PDA) for San Rafael. The new PDAs cover North San Rafael Northgate and the greater Southeast San Rafael/Canal areas. The PDA designation for these areas would: a) help align regional planning with the priorities identified in the General Plan 2040; and b) provide a significant opportunity to increase access to dedicated regional funding and technical assistance. As programmed in the General Plan 2040, access to this dedicated funding could be used to facilitate a robust, community-driven planning process to develop Community or Specific/Precise Plans for these PDAs. Further, the PDA status could provide access to funding for the developing of an adaptation plan. Access to these planning funds could not be timelier given the inequities felt by the Canal neighborhood as a result of the region's housing crisis and the disproportionate impact presented by the threat of sea level rise.
2. City Support for Canal Alliance Better Together Resilient Communities Grant Application. Last month, the City Manager submitted a letter of support to Pacific Gas & Electric for the Canal Alliance's grant application for the Better Together Resilient Communities Grant. The grant is being pursued to build capacity and understanding in the Canal neighborhood on the intersection of climate change impact and community priorities. If funded, "Capacity, Culture, & Resilience: Collaboration and Innovation for Climate Change Adaptation" would be a one-year project led by Canal Alliance in collaboration with the City of San Rafael, San Rafael Chamber of Commerce, and Resilient Shores. This project proposes to formulate a set of actions, developed by the community, that will reduce flood risk and support a healthy and resilient shoreline. It is being proposed in the context of: a) future preparation of a Neighborhood Community or Specific Plan; and b) addressing and pursuing other similar and related efforts for building capacity in community & economic development, housing, resilience, recovery, and creating opportunities through developing civic engagement, and crafting campaigns in education, leadership, and planning.

3. Proposition 68 Ocean Protection Council Grant. In June 2018, the California voters passed Proposition 68 establishing a general obligation bond funding source for addressing, among other issues, climate protection. With funding from Proposition 68, the Ocean Protection Council (OPC, part of the State of California Natural Resources Agency) recently announced a new solicitation for grant proposals for projects benefitting California's ocean and coast. The priority issue area for this round of Proposition 68 funding is coastal resiliency and nature-based adaptation strategies for sea level rise impacts. Last month, the City, in partnership with the County of Marin submitted a Letter of Intent for the grant application. If awarded, the grant would be utilized to build a collaborative framework for adaptation and resilience planning in the Southeast San Rafael/Canal area. This project would involve engaging residents and business owners in shared visioning and goal setting for community resilience, specifically focusing on sea level rise and flooding.

Consistent with the requirements for filing a Letter of Intent, the project scope lays out a 2.5-year process that would include identifying and prioritizing resilient solutions. The Letter of Intent specifies a likely grant amount. On October 8, the City/County received notice from OPC that we are invited to submit a full grant application proposal. This full grant application will need to be completed and submitted to OPC in mid-November. The final decisions on the award of the grant funds are expected to be made in February 2021.

4. TAM Funds for Sea Level Rise. The Transportation Authority of Marin's (TAM) ½-cent Transportation Sale Tax Measure AA Expenditure Plan provides local transportation funding dedicated to support Sea Level Rise and Resiliency efforts. The funding will also launch new infrastructure projects that promote resiliency and innovation, particularly projects that tackle flooding and sea level rise impacts to our transportation infrastructure. Marin's transportation infrastructure is sited along vulnerable bay frontage that is at increasing risk of flooding and erosion from sea level rise and king tide events. This funding would be utilized to support protecting and adapting Marin's roadways and related infrastructure to the effects of sea level rise and flooding. These funds can be used to serve as seed money to find solutions, attract matching grants and leverage private investments to meet the challenges and vulnerabilities identified in numerous planning efforts including BayWAVE. Sea Level Rise and Resiliency funds will be available to eligible recipients including local jurisdictions and will be distributed on a competitive basis following a Call for Projects managed by TAM. The funding is expected to generate \$270,000 annually, and TAM will host a discussion of the planning framework for how to allocate these funds at the November 2020 Board of Directors meeting.
5. Tiscornia Marsh Habitat Restoration & Sea Level Rise Adaptation Project. In 2019, Marin Audubon Society was awarded a Measure AA Planning Grant to develop a plan for the restoration of Tiscornia Marsh. This project, which is located at the mouth of San Rafael Creek, includes planned restoration of the immediately contiguous, City-owned diked marsh located north of the Albert J. Boro Community Center playfields. As a standalone restoration and adaptation effort, it is the type of project that serves as a model for a nature-based approach to adaptation. This project is progressing; draft plans are being completed and the environmental review process will commence in early 2021.
6. Aquatic Science Center Studies Groundwater. Earlier this year, a regional proposal was launched by the Aquatic Science Center (ASC), a joint powers authority of several counties and cities along the North and Central San Francisco Bay. The County of Marin is a member of this joint powers authority. In planning for adapting to sea level rise, emergent groundwater is often overlooked or neglected. Logically, as flood waters rise, so does groundwater that is influenced by the tides. ASC will be developing a series of groundwater maps that consider the response to eight sea level rise scenarios (12-inch rise to 108-inch rise). These maps will cover Marin County and will provide another layer of valuable information in our planning ahead for sea level rise adaptation. Groundwater



is a critical factor for San Rafael. Many of the low-lying areas have a high groundwater table that is influenced by both hillside runoff and the tides. The information from this study will be valuable in preparing an adaptation plan.

7. Marin County Civil Grand Jury Report – Climate Change: How Will Marin Adapt? In September, the Marin County Civil Grand Jury released its report entitled, [Climate Change: How Will Marin Adapt?](#) This report finds that while the Marin County public agencies have done a good job at identifying and addressing climate change, adaptation for this change has “taken a back seat.” The Grand Jury presents four recommendations to address this issue. One of the four recommendations calls for the County to form a centralized County of Marin office to coordinate and unify climate efforts at a county level. The City is required to formally respond to six questions posed in the report by early December. Staff is currently reviewing this report and it will be scheduling a proposed City response for City Council review.

### **Next Steps**

With the recent release of the Draft General Plan 2040, the public review process of this document has commenced. The adaptation report and the technical guidance study summarized above are supportive documents to the Draft General Plan 2040. Therefore, it is recommended that public be afforded the opportunity to review and comment on these documents in tandem with commenting on the Draft General Plan 2040. The Final General Plan 2040 and these supportive documents will return to the City Council in Spring 2021 for final review and adoption.

As a next step, the City could develop funding strategies and an implementation schedule for the short-term projects identified in the technical guidance study. The citywide measures would help identify strategies to address key uncertainties regarding flooding from the Canal, implementing the sea level rise zoning overlay, and characterizing the long-term needs for the shoreline pump stations. Most of the other short-term projects would remediate flooding that occurs every few years, in some cases temporarily encroaching on or blocking travel along major roads, such as Pt. San Pedro Road and the intersection of Second and Irwin Streets.

### **COMMUNITY OUTREACH:**

A public notice of this meeting was prepared to cover both the General Plan 2040 Progress Report #5 (separate item on the City Council agenda) and this report on sea level rise adaptation. The meeting notice was mailed to stakeholders, agencies, and special interest groups 15-days prior to this meeting (Attachment 2). Those noticed included, among others, all neighborhood associations in the City, the San Rafael Chamber of Commerce, members of the General Plan 2040 Steering Committee, and Sustainable San Rafael. Notice of this report was also provided on the General Plan 2040 [meetings and events webpage](#).

### **FISCAL IMPACT:**

As an informational report, no action is being taken that would have a fiscal impact on the City. The cost for completing the Flood Risk & Sea Level Rise Adaptation Report was \$25,000, which was appropriated from General Plan Special Revenue Fund #218. The cost associated for the Sea Level Rise Adaptation Technical Guidance Study was \$75,000, which was appropriated from the Stormwater Fund #205.

### **OPTIONS:**

The City Council has the following options to consider on this matter:

1. Accept the report as recommended by staff.
2. Direct staff to return with more information.
3. Reject report.

4. Take no action.

**RECOMMENDED ACTION:**

Accept report.

**ATTACHMENTS:**

1. Draft General Plan 2040 Safety Element Sea Level Rise Policies & Programs
2. Meeting notice

## ATTACHMENT #1

### Draft San Rafael General Plan 2040 Safety Element- Sea Level Rise Policies & Programs

#### **Goal S-3: Resilience to Flooding and Sea Level Rise**

**Recognize, plan for, and successfully adapt to the anticipated effects of increased flooding and sea level rise.**

*San Rafael's land use patterns, transportation system, and infrastructure should be planned to anticipate the impacts of extreme weather events and global climate change, including sea level rise and potential flooding. A range of measures will be used to mitigate flood hazards along drainageways and creeks and improve resilience and flood protection in low-lying areas, Policies to reduce the greenhouse gas emissions that contribute to global climate change are included in other parts of the General Plan, especially the Conservation/ Climate Change Element and the Mobility Element.*

#### **Policy S-3.1: Sea Level Rise Projection Map**

Utilize Figure S-2 (Sea Level Rise Projection Map) to address flooding and sea level rise hazards. The figure should be used 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 "overlay zone" and building code requirements for future planning and adaptation.
- d. plan opportunity areas for adaptation.
- e. inform funding and financing decisions about short-term and long-term adaptation projects.

***Program S-3.1A: Incorporate into City GIS.*** *Incorporate the Sea Level Rise Projection Map into the City's Geographic Information System (GIS) map and utilize GIS as a publicly accessible tool for tracking flooding and sea level rise hazards.*

***Program S-3.1B: Periodic Update of Sea Level Rise Projection Map.*** *Review sea level rise data at least once every five (5) years to determine the need for Map updates.*

***Program S-3.1C: Sea Level Rise Overlay Zone.*** *Adopt an "overlay zone" on the City Zoning Map incorporating the Sea Level Rise Projection Map. The "overlay zone" shall include land use regulations for site planning and a minimum construction elevation that reflects flooding and sea level rise data.*

#### **Policy S-3.2: Data Consistency**

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 S-3.2A: Coordination with County of Marin.*** *Coordinate with the County of Marin on updating data related to increased flooding and sea level rise. Utilize the County of Marin Bay Waterfront Adaptation & Vulnerability Evaluation (BayWAVE) as the basis for all City-prepared documents and plans addressing and adapting to increased flooding and sea level rise.*

#### **Policy S-3.3: Awareness and Disclosure**

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

***Program S-3.3A. 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.*

#### **Policy S-3.4: Mitigating Flooding and Sea Level Rise Impacts**

Consider and address increased flooding and sea level rise impacts in vulnerable areas (see Figure S-2) in development and capital projects, including resiliency planning for transportation and infrastructure systems.

## ATTACHMENT #1

### Draft San Rafael General Plan 2040 Safety Element- Sea Level Rise Policies & Programs

**Program S-3.4A: Development Projects.** *Where appropriate, require new development, redevelopment projects, and substantial additions to existing development to consider and address increased flooding and sea level rise impact, and to integrate resilience and adaptation measures into project design.*

**Program S-3.4B: Capital Projects.** *Prepare a guidance document for addressing increased flooding, sea level rise impacts, and adaptation measures into the City's capital projects and planning process. This should include strategies for identifying and evaluating the costs, benefits and potential revenue sources for elevating or redesigning low-lying roadways and critical infrastructure. If the life of a public improvement in a vulnerable area extends beyond 2050, adaptation measures should be incorporated.*

**Program S-3.4C. Coordination with Utilities and Services.** *Coordinate with the utilities and services that have infrastructure and facilities in vulnerable areas (for example: wastewater treatment plants) 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.*

*See also Policies CSI-4.6 and M-2.11 addressing sea level rise impacts on infrastructure and transportation*

**Policy S-3.5: Minimum Elevations.** For properties in vulnerable areas, ensure that new development, redevelopment, and substantial additions to existing development meets a minimum required construction elevation. Minimum elevations should provide protection from the potential impacts of a 100-year flood (a flood with a one percent chance of occurring in any given year), the potential for increased flooding due to sea level rise, and the ultimate settlement of the site due to consolidation of bay mud from existing and new loads and other causes.

**Program S-3.5A: Code Amendments for Floor 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 +3 feet above the FEMA 100-year flood elevation requirement.<sup>2</sup>*

**Program S-3.5B: Ground Elevation Surveys.** *Perform periodic ground elevation surveys in the Sea Level Rise vulnerability zone. The result of the surveys should be considered when developing projects to reduce coastal flooding potential.*

**Program S-3.5B: Title 18 Flood Protection Standards.** *Evaluate and revise Title 18 of the Municipal Code (Protection of Flood Hazard Areas) to address anticipated sea level rise, increases in rainfall intensities, and any changes related to Federal or regional flood reduction criteria.*

**Program S-3.5C: National Flood Insurance Program (NFIP).** *Continue to comply with the federal NFIP by maintaining a flood management program and flood plain management regulations. In addition, develop and periodically update a Community Rating System (CRS) to notify residents of the hazards of living in a flood area, thereby reducing local flood insurance rates.*

#### **Policy S-3.6: Resilience to Tidal Flooding**

Improve San Rafael's resilience to coastal flooding and sea level rise through a combination of structural measures and adaptation strategies.

## ATTACHMENT #1

### Draft San Rafael General Plan 2040 Safety Element- Sea Level Rise Policies & Programs

**Program S-3.6A: Sea Level Rise Adaptation Plan.** Prepare and adopt an adaptation plan addressing increased flooding and sea level rise. The adaptation plan shall include the following components:

- a. Sea Level Rise Projection Map, to be used as the basis for adaptation planning.
- b. 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.
- c. An outreach plan to major stakeholders and property owners within the vulnerable areas.
- d. An inventory of potential areas and sites suitable for mid- to large-scale adaptation projects (see Appendix #: Sea Level Rise Adaptation Study for more information)
- e. A menu of adaptation measures and approaches that would include but not be limited to:
  - o Managed retreat, especially on low-lying, undeveloped, and underdeveloped sites; in areas that are permanent open space; and in areas that are environmentally constrained. Transfer of development rights from such areas should be encouraged.
  - o Innovative green shoreline protection and nature-based adaptation measures such as wetlands and habitat restoration, and horizontal levees where most practical and feasible.
  - o Hard line armoring measures (sea walls, levees, breakwater, locks, etc.) in densely developed areas to minimize the potential for displacement of permanent residents and businesses.
  - o Elevating areas, structures, and infrastructure to reduce risks.
- f. The appropriate timing and “phasing” of adaptation planning and implementation.
- g. Potential financing tools and opportunities.
- h. Coordination or incorporation into the San Rafael Local Hazard Mitigation Plan.

**Program S-3.6B: 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.

**Program S-3.6C: Countywide Agency/Joint Powers Authority.** Work with the County of Marin to facilitate the formation of a centralized countywide agency or joint powers authority to oversee adaptation planning, financing, and implementation.

#### **Policy S-3.7: Shoreline Levees**

Improve and expand San Rafael's shoreline levee system. When private properties are developed or redeveloped, require levee upgrading as appropriate, based on anticipated high tide and flood conditions.

**Program S-3.7A: Levee Improvement Plans.** Assess existing levees, berms, and flood control systems to identify reaches with the greatest vulnerability. Develop improvement plans based on existing conditions and projected needs, as documented in adaptation plans. This should include improvement studies for the Spinnaker Point levee, as recommended by the LHMP, and the Canalways levee along San Pablo Bay.

**Program S-3.7B: Financing Levee Improvements.** Coordinate with property owners; residents and businesses; federal, state, and regional agencies; utilities; and other stakeholders to evaluate potential methods of improving levees and funding ongoing levee maintenance, including assessment or maintenance districts. The cost and fiscal impacts of levee improvements should be evaluated against potential benefits, as well as the potential costs and consequences of inaction.

#### **Policy S-3.8: Storm Drainage Improvements**

## ATTACHMENT #1

### Draft San Rafael General Plan 2040 Safety Element- Sea Level Rise Policies & Programs

Require new development to mitigate potential increases in runoff through a combination of measures, including improvement of local storm drainage facilities. Other measures, such as the use of porous pavement, bioswales, and “green infrastructure” also should be encouraged.

**Program S-3.8A: Storm Drainage Improvements.** *Consistent with Countywide and regional stormwater management programs, require new development with the potential to impact storm drainage facilities to complete hydrologic studies that evaluate storm drainage capacity, identify improvements needed to handle a 100-year storm, and determine the funding needed to complete those improvements.*

**Program S-3.8B: Green Infrastructure Guidelines.** *Evaluate potential measures to more sustainably manage stormwater, erosion, and improve water quality associated with urban runoff.*

*See also Goal C-3 and Policy CSI-4.10 for related policies and programs on water quality and storm drainage*

#### **Policy S-3.9: Flood Control Improvements Funding**

Pursue financing and funding opportunities to fund short-term and long-term flood control and adaptation projects. Funding tools and opportunities would include, among others tax or bond measures, assessment districts, geologic hazard abatement districts and grants. The City will also support legislation that provides regional, state, and federal funding for these projects, and will pursue such funding as it becomes available.

**Program S-3.9A: Incremental Flood Control Improvements.** *Where needed and possible, new development/ redevelopment projects shall include measures to improve area flood protection. Such measures would be identified and required through the development review process.*

**Program S-3.9B: Flood Hazard Mitigation Projects.** *Undertake flood hazard mitigation projects as outlined in the Local Hazard Mitigation Plan, including sewer relocation and replacement, pump station rehabilitation, corrugated metal pipe replacement, and improvements to flood-prone streets such as Beach Drive.*

**Program S-3.9C: Restoration and Dredging Projects.** *Implement restoration and dredging projects that will increase stormwater drainage capacity and reduce flood hazards. As noted in the LHMP, this could include restoration of the Freitas Parkway flood channel and dredging of Gallinas Creek and the San Rafael Canal.*

*See also Policy CSI-4.11 on canal dredging.*



**NOTICE OF PUBLIC HEARING – CITY COUNCIL**

You are invited to view and participate online for the City Council hearing on the following project:

**PROJECT: PROGRESS REPORT #5 ON SAN RAFAEL GENERAL PLAN 2040-** An update on General Plan 2040 will be presented to the City Council, including the Downtown Precise Plan and Form Based Code, Environmental Impact Report, Traffic Impact Fee study, and upcoming adoption schedule. The report will include introduction on the upcoming release of public review drafts of the Draft General Plan 2040, Downtown Precise Plan and EIR. Following the presentation of the Progress Report, the City Council will be presented with a summary of the Sea Level Rise Adaptation Report and Study, which have been prepared for the General Plan 2040. Case Nos.GPA16-001 & P16-013.

*State law (California Environmental Quality Act) requires that this project be reviewed to determine if a study of potential environmental effects is required. It has been determined that this project, which is an informational report, will have no physical impact on the environment. This informational report is classified as a planning study, which qualifies for a Statutory Exemption from the provisions of the California Environmental Quality Act Guidelines under 14 CRR Section 15262.*

**MEETING DATE/TIME/LOCATION: Monday, October 19, 2020, 7:00 p.m.** COVID-19 ADVISORY NOTICE: Consistent with Executive Orders No's.-25-20 and N-29-20 from the Executive Department of the State of California and the Marin County 3/16/20 Shelter in Place Order, the City Council hearing of October 19, 2020 WILL NOT be physically open to the public and the meeting will be streamed live to YouTube at [www.youtube.com/sanrafael](http://www.youtube.com/sanrafael). Instructions on how to participate online, will be available on the YouTube channel.

**FOR MORE INFORMATION:** Contact **Barry Miller**, Project Manager, at **(415) 485-3423** or [barry.miller@cityofsanrafael.org](mailto:barry.miller@cityofsanrafael.org). Please note that City offices are currently closed to public walk-in, but you may contact the planner for more information. You may also view the staff report after 5:00 p.m. on the Friday before the meeting at <http://www.cityofsanrafael.org/meetings>.

**WHAT WILL HAPPEN:** You can comment on the informational report and options presented in the report. The City Council will consider all public testimony. However, as this item is an informational report, no formal action will be taken by the City Council.

**IF YOU WANT TO COMMENT:** You may provide comments to the planner using the contact information listed above prior to the meeting. You may also comment on line during the meeting using a chat feature on YouTube or through a conference call (number will be provided on agenda)

At the above time and place, all letters received will be noted and all interested parties will be heard. If you challenge in court the matter described above, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice, or in written correspondence delivered at, or prior to, the above referenced public hearing (Government Code Section 65009 (b) (2)).

Appeals of decisions by the Planning Commission to the City Council shall be made by filing a notice thereof in writing with the required fee to the Planning Division of the Community Development Department within 5 working days of a decision involving Title 14 (Zoning) (SRMC Section 14.28.030) or within 10 calendar days of a decision involving Title 15 (Subdivisions) (SRMC 15.56.010).

*Language interpreters and assistive listening devices may be requested by calling (415) 485-3066 (voice), emailing [Lindsay.Jara@cityofsanrafael.org](mailto:Lindsay.Jara@cityofsanrafael.org) or using the California Telecommunications Relay Service by dialing "711", at least 72 hours in advance of the meeting. Copies of documents are available in accessible formats upon request. Public transportation is available through Golden Gate Transit, Line 22 or 23. Paratransit is available by calling Whistlestop. Wheels at (415) 454-0964. To allow individuals with environmental illness or multiple chemical sensitivity to attend the meeting/hearing, individuals are requested to refrain from wearing scented products.*