

# General Narrative Questions

## Applicant Information

Proposed Project Name: *San Rafael Climate Adaptation Planning Collaborative*

Lead Applicant: *City of San Rafael, California*

## Instructions

- **Word counts** are listed for each question. Adhering to word counts is strongly recommended, but not required.
- **Maps, figures, and pictures** may also be included as part of the responses.
- **Formatting** such as bullet points (●, ○, Ø), lettering (a, b, c), or underline may be used to organize responses. Avoid excessive formatting to ensure readability.
- **Naming conventions** for the workbook and application narrative should mirror the following format [Lead Applicant Name – Project Name- Name of Document] for example [City of Albuquerque – Climate Adaptation Plan - Narrative].

## Checklist

Use the checklist below to ensure all materials have been submitted as part of the Application.

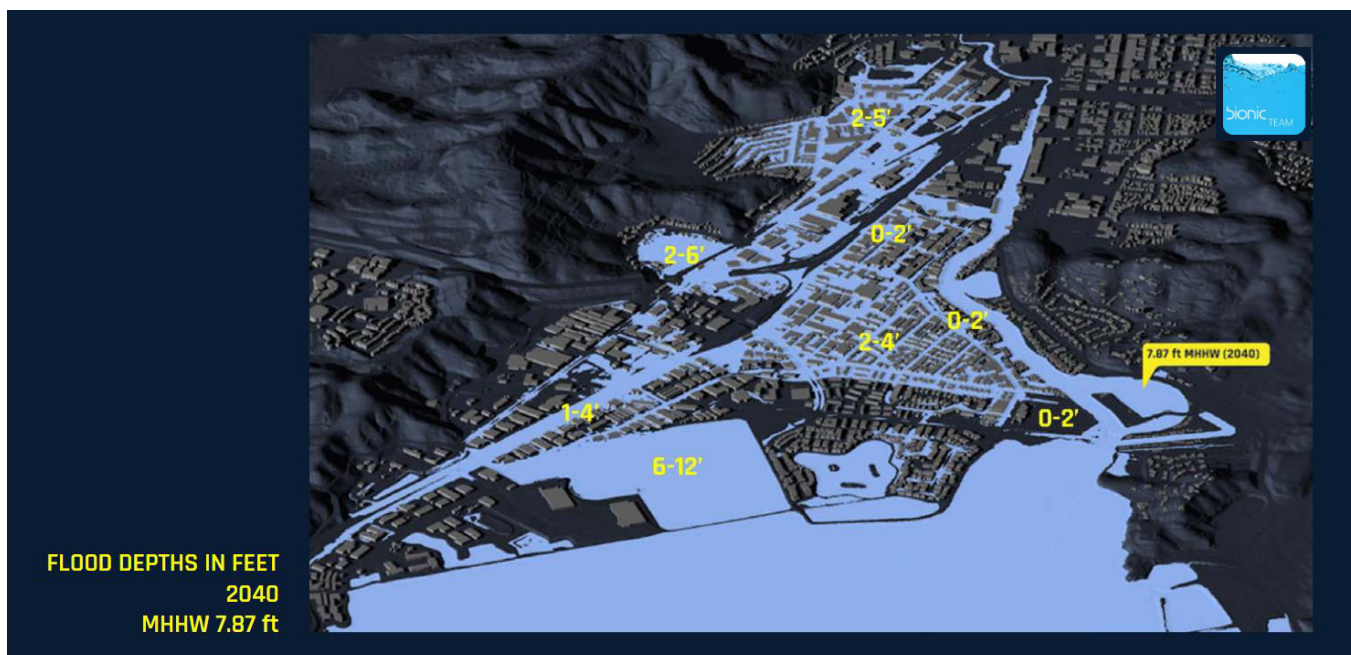
- General Narrative Questions (this Word document)
- Workbook (Includes Applicant Summary, Work Plan and Budget) (Excel)
- Letters of Support (PDF)

## Project Vision & Priorities

*The Canal is a vibrant community of more than 12,000 residents from all over the world; however, it is one of the most vulnerable to climate change in the entire state. The Canal is built upon subsiding reclaimed land that is already lower than today’s high tides. The shoreline is a discontinuous network of public and private assets, which the Army Corps noted was inadequate for flood protection. As sea levels rise, it is becoming more exposed and was identified as the most vulnerable zone in the Bay area to short-term sea level rise (SLR).*

*According to FEMA, it is more vulnerable than 99% of census tracts in the nation. It is also the most segregated Latino neighborhood in the Bay area, and residents in one tract are more housing burdened than in 99% of other tracts in California.*

*This project will work with disproportionately vulnerable residents to co-create solutions to build a safer, more resilient community. This project proposes to build on an exciting partnership between the City of San Rafael, the County, the Canal Alliance, the Multicultural Center of Marin, and UC Berkeley. The partners would work collaboratively and with community members to improve the understanding of climate hazards using the most current science and prioritize adaptation measures that will address the community’s short-term needs and minimize risks to housing and safety. This effort would lay a strong foundation for long-term resilience by building climate capacity at community-based organizations and directly connecting Canal students with STEM educational opportunities.*



## Community Need & Adaptive Capacity

The Canal neighborhood in San Rafael is a frontline community facing disproportionate impacts of flooding due to climate change. The Canal is the most densely populated area in the County, and more than two-thirds of all occupied housing units meet the Census definition of “overcrowded.” The neighborhood is home to more than 12,000 people, who are predominantly cost-burdened renters. Within one census tract, 91% of housing units are renter-occupied.

Despite relatively high employment rates, nearly one-third of Canal residents live below the federal poverty line. More than half of residents over 25 do not have a high school diploma. Median per capita income is about one-quarter the citywide average and is a designated low-income community according to the California Climate Investments Priority Populations 2022 CES 4.0. The Canal is the most segregated Latino neighborhood in the Bay Area and segregation has worsened over the past decade. In the Canal, more than 90% of residents are of Hispanic/Latino origin and are underrepresented in local and regional government.

This proposal was developed in partnership with two community-based organizations, Canal Alliance and the Multicultural Center of Marin. They will continue to guide the adaptation planning to ensure it is serving community priorities.

### VULNERABILITY STATISTICS

Statistics for the Canal District census tracts. Data is presented for tract 6041112202 and 6041112201 respectively

	<p>More <b>housing burdened</b> than 93 &amp; <b>99%</b> of other census tracts in California [1]</p>
	<p>The percent of <b>adults without a high school education</b> is higher than in 86 <b>99%</b> of other census tracts in California [1]</p>
	<p>The percent of <b>linguistically isolated householders</b> is higher than in 90 and <b>99%</b> of other census tracts in California [1]</p>
	<p>The percent <b>without tree canopy</b> is 89% and <b>99.5%</b> The County average is 65.2% [2]</p>
	<p>The risk index rating is “<b>very high</b>” when compared to the rest of the U.S. <b>99.5 and 99%</b> <b>of U.S. Census tracts have a lower Risk Index</b> [3]</p>

Sources:  
[1] CalEnviroScreen 4.0, [2] Climate Change & Health Vulnerability Indictors for California, [3] FEMA’s National Risk Index

*Much of San Rafael is already below today's high tides. As a result, the entire Canal area would be below sea levels anticipated by just 2040. Without action, one-third of the city's population and two-thirds of its economic base would be permanently inundated by the end of the century.*

*The Canal is built upon partially reclaimed land, which is subsiding. While much of the land is lower than the Bay it is currently insulated from regular tidal flooding due to a discontinuous system of uncertified levees, pump stations, private lawns, driveways, and seawalls. However, this infrastructure will not provide meaningful protection in the face of a storm nor climate change. A report from the Army Corps in 1990 concluded that,*

*"existing flood control facilities were constructed in a piecemeal manner over a period of decades... the overall system provides only a low level of protection which is inadequate for a densely urbanized area."*

*This same report identified the risk of possible levee failure due to overtopping. Today, water levels are higher, and failure could have potentially catastrophic impacts due to the high population density, the number of ground-level apartments, and limited evacuation routes. These risks are compounded by high groundwater, rainfall intensification, and risks of tsunamis and seismic impacts due to the construction on fill and presence of soft-story structures.*



*While the climate impacts are extensive, residents face even more urgent issues due to escalating housing costs, overcrowding, and the real threat of displacement from one of the only affordable areas in the region. Climate change is significantly increasing the risk of displacement within this generation. Many residents would not have the resources to recover after a disaster.*



*While previous studies identified the vulnerability, different information is needed to bridge the gap between knowledge of the risks and making tangible investments to protect housing and infrastructure. For example, studies have identified risks to the levees, fire stations, and healthcare facilities, but more detail is needed to understand what the critical elevations and exposed components are for those facilities. This project would complete a more detailed vulnerability assessment focused on short-term life-safety risks and cascading impacts from infrastructure failures. This will include gathering fundamental physical data on surface and ground water levels, salinity, hydrologic connectivity, levee conditions, and geophysical conditions to better characterize climate hazards, timing, and impacts. This will include a detailed assessment of the exposure, sensitivity, and potential impact of flooding on critical infrastructure in the exposed area. This analysis would utilize the most current guidance on SLR that incorporates the best-available science from the IPCC's 6th assessment. This phase will engage the agencies responsible for critical infrastructure, including below-ground assets. A portion of this data gathering will be done through a collaborative community science effort to build capacity and connect Canal students with educational opportunities in STEM fields. Canal Alliance will facilitate participation from students in their University Prep (UP!) program. This will create an opportunity for younger students to work with Berkeley students and faculty. There will be an opportunity for one Canal student to have a year-long paid fellowship. In parallel, the Multicultural Center of Marin would lead community engagement and participatory asset mapping, which will be incorporated into the vulnerability assessment. Adaptation actions would then be prioritized based on those results and community input. This effort would also advance adaptation policies recently integrated into the City's General Plan.*



Wastewater infrastructure



High pressure gas line

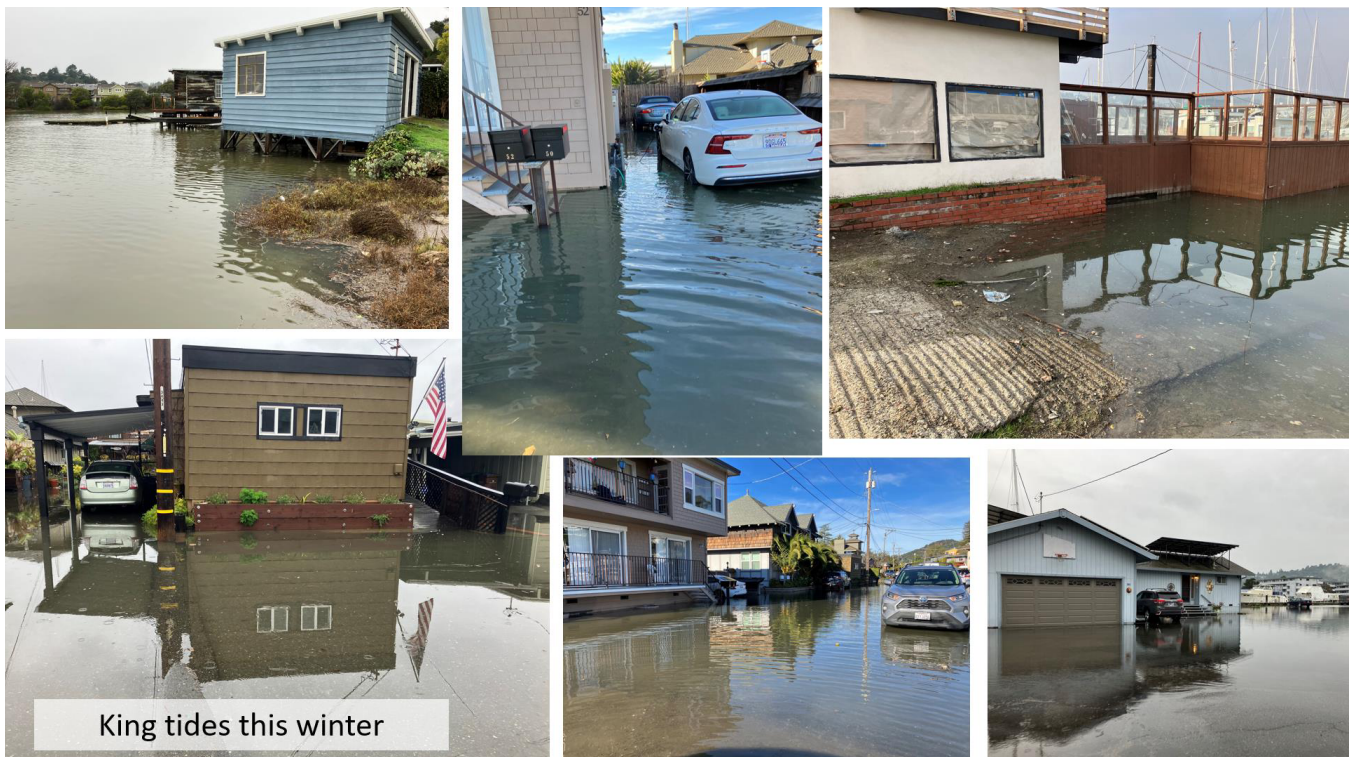


Road flooded at high tide

## Co-Benefits

*This collaborative team is focused on advancing social equity and resilience in a community at high risk of displacement due to short-term housing insecurity and climate change. This project would build civic engagement to transform the local decision-making dynamic by educating, empowering, and activating residents to drive placemaking and planning projects that build climate resilience. To foster long-term community resilience this project is also centered on youth engagement. The Canal Alliance's University Prep (UP!) program supports Latino students from immigrant families to prepare for and complete college and obtain career-path employment that pays livable and equitable wages. This project will create educational opportunities for first-generation students and accelerate the success of immigrants. This project will plant the seeds for long-term community resilience by connecting these students and a year-long fellow with UC Berkeley students and faculty as well as with local government officials.*

*There are also significant environmental co-benefits for this project. Without action many critical facilities, including wastewater pump stations, are at risk of damage or failure under current conditions. As precipitation events intensify and sea levels rise the risk of failure of these facilities is increasing. Infrastructure failure could lead to public health and water quality impacts. This project seeks to proactively identify those risks. Additionally, the city has committed in its General Plan 2040 to "prioritize natural and green infrastructure solutions" as part of its adaptation planning.*

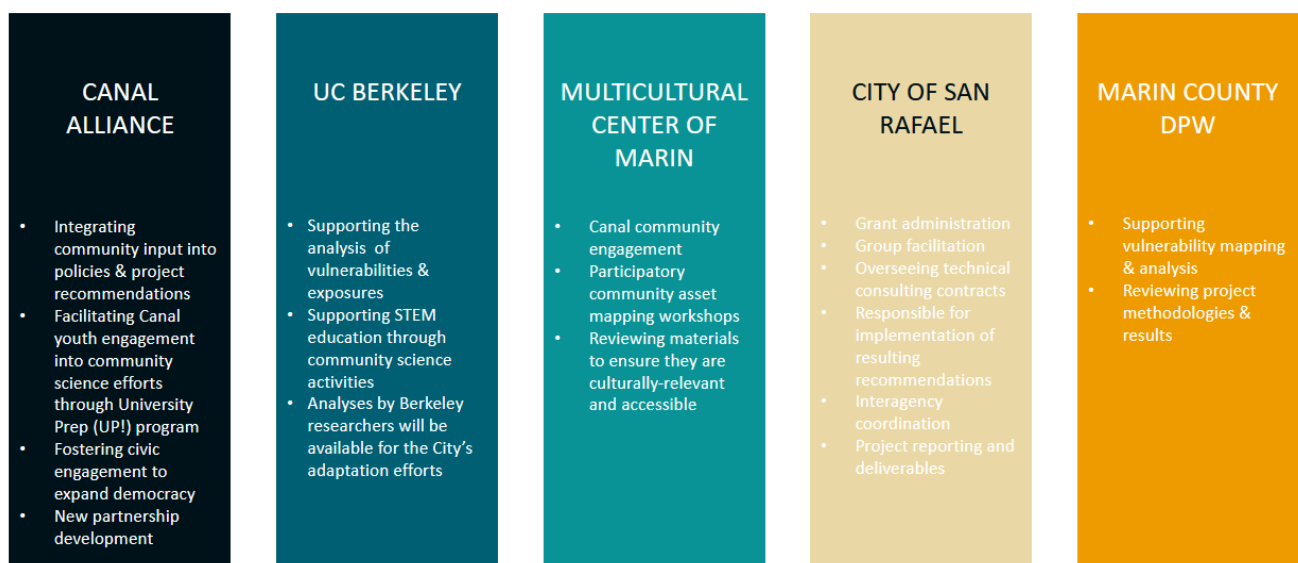


## Community Partnership

*This project proposes to model a deeply collaborative, community-led climate adaptation planning process that inverts traditional planning processes and centers the community in decision-making. If funded, this project would be completed by a cooperative project team with the following partners. The **City of San Rafael** will oversee the grant administration and is responsible for implementation. The **Canal Alliance** works with low-income Latino residents and community activists on political issues and non-political actions that address public concerns, improve democracy, and promote quality of life in the Canal neighborhood. The Canal Alliance creates civic spaces and leadership development opportunities to ensure that low-income residents have a voice in decisions that affect them and the opportunity to fully participate in democracy at all levels. The Canal Alliance would facilitate student participation in the project, supervise a year-long student fellowship, and integrate community input into project policy recommendations. The **Multicultural Center of Marin** provides culturally appropriate resources and opportunities in a safe environment to empower and inspire diverse communities to build an inclusive and equitable county they want to live in. Here the Multicultural Center would lead community engagement and participatory asset mapping, which will be incorporated into the vulnerability assessment. The **University of California Berkeley**, including Professor Dr. Mark Stacey, the Civil and Environmental Engineering Department Chair, and Dr. Kristina Hill, the Program Director of the Institute for Urban and Regional Development and Associate Professor of Landscape Architecture & Environmental Planning and Urban Design, are experts in SLR adaptation and will advise on the technical analysis and community science efforts and supervise students. Professors Hill and Stacey have been working for years at the forefront of coastal climate adaptation research. The **Marin County Department of Public Works** leads the BayWAVE program, which coordinates all bayside cities and towns to help communities understand and prepare for sea level rise. The County’s multi-jurisdictional coordination is critical, as sea level rise crosses political boundaries and impacts shared resources, utilities, and infrastructure.*

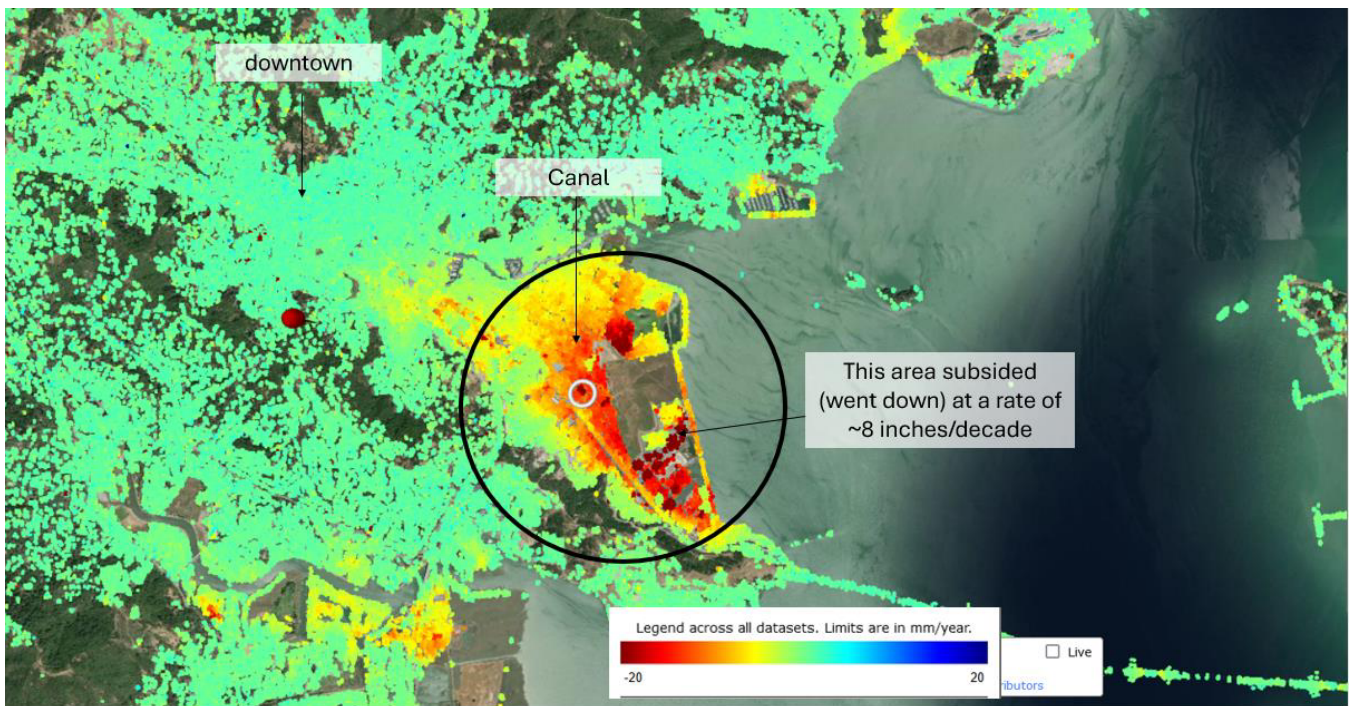
### SAN RAFAEL CLIMATE ADAPTATION PLANNING COLLABORATIVE

roles and responsibilities





*This partnership is well positioned as the City, County, Canal Alliance, and Multicultural Center, are currently collaborating on a climate project. These partners already have both formal and informal working relationships in place that would allow this project to hit the ground running. The partners have collaborated on several past projects, and staff bring years of professional experience on these issues to bear. Another strength of this collaboration is the diversity of knowledge that each partner brings to the table, including expertise in physical sciences, policy, housing, equitable and culturally relevant community engagement, community resiliency, data, and mapping. Most importantly, the community-based organizations, the Canal Alliance and the Multicultural Center of Marin, bring decades of experience and relationships with this frontline community. This funding would help build professional climate adaptation capacity at these two organizations. Building this capacity will help traditionally under-resourced communities shape adaptation decisions and investments.*



## Workplan and Budget

The proposed budget is focused on four primary capacity-building strategies. These concurrently deepen understanding of physical and community infrastructure to identify opportunities to strengthen community resilience. The budget is directed toward (1) improving the fundamental science that is the basis of adaptation decision-making, (2) analyzing the vulnerability of critical infrastructure and community assets in partnership with residents, (3) evaluating and prioritizing adaptation actions to bolster public health and safety, and (4) developing an actionable implementation plan.

To support this, a technical **subcontractor** will be used throughout, but primarily for tasks 1, 2, and 3 to gather better information on surface water, groundwater, geotechnical data, critical elevations and thresholds for infrastructure, and to analyze vulnerabilities and protective measures. This cost includes consultant staff, monitoring equipment, and coordination with partners.

Across all activities, funding is explicitly structured to build long-term community capacity in the Canal at the professional level, among students, and residents. All technical analysis is paired with community participation. Resources are allocated to peer-to-peer learning, **engagement, language access, partnership development, and facilitating participation in meetings** and decision-making processes. To maximize community benefit, the requested funds would be directed toward **partner staff time**. Cost estimates for staff time are based on actual salaries or currently negotiated rates and include benefits and a COL adjustment. To facilitate learning and capacity building, a **travel** budget is included to facilitate three Canal students’ attendance at one relevant convening, such as the National Adaptation Forum or equivalent.

## Project Plan

The proposed project schedule outlines the sequence of adaptation planning activities. Note: many activities are interrelated and will overlap. Community meetings are represented with "o".

