

# Santa Cruz Integrated Regional Water Management

**Project:** Decision-Support Tool - Understanding Climate Influenced River Flooding  
**Grantee:** Regional Water Management Foundation  
**Lead:** City of Santa Cruz Public Works Department  
**Location:** City of Santa Cruz – San Lorenzo River Watershed  
**Funders:** California Department of Water Resources (Prop. 1 Integrated Regional Water Management Implementation Grant Program); Santa Cruz County  
**Amount:** \$179,375 (DWR Grant); \$25,625 (local matching funds)  
**Year:** 2023-2025  
**Status:** Proposition 1 Round 2 Implementation Grant Awarded May 2023

**Purpose:** The City of Santa Cruz will develop a decision-support tool to improve the understanding of climate influenced river flooding on the San Lorenzo River and inform future City management actions.

**Issues Addressed:** Mitigating the risks and impacts to the community resulting from potential flooding along the San Lorenzo River in the City of Santa Cruz.

**Summary:** A sea level rise vulnerability assessment and social vulnerability to climate change analysis, along with prioritized adaptation strategy measures were included in the City of Santa Cruz 2018 Climate Adaptation Plan Update (CAPU), an appendix to the Local Hazard Mitigation Plan (LHMP). Those plans prioritize mitigating the impacts of climate change on flood control capacity. However, no work to date, including FEMA mapping revised in the last decade, addresses the potential for flooding due to sea level rise and increasingly intense winter storms on the urban area and lower watershed currently protected by the San Lorenzo River (SLR) levee system. Together, these impacts will increase flood risk directly via river levels and indirectly by seepage and higher groundwater. To better understand climate-influenced riverine flooding in the lower SLR, the City will:

- Conduct technical analyses of climate change vulnerabilities on watershed hydrology and river hydraulics:
  - Develop hydroclimate scenarios, characterize extreme streamflows, and conduct 2-dimensional hydrodynamic modeling.
  - Develop floodplain mapping integrated with projected coastal flood mapping produced for the 2018 CAPU.
- Develop a Decision Support Tool (DST) based on adaptation pathways that utilize triggers and thresholds to proactively signal when infrastructure and programming should be implemented to mitigate impacts.
- Mobilize key departments, consultants, and agencies.
- Perform outreach to frontline groups in Disadvantaged Community (DAC) census tracts within the SLR.

**Results:** The DST will be integrated into the City of Santa Cruz 2023 CAPU and LHMP Update. Partners will participate in evaluation to understand the efficacy of the adaptation pathways approach and the DST. The DST will help to identify, sequence and plan policies, programs, and infrastructure needs. It will also aid in targeting public outreach, guiding flood control management and bolstering resilience of the flood control systems.