SAN FRANCISQUITO CREEK
JOINT POWERS AUTHORITY
sfcjpa.org

East Palo Alto, Menlo Park, Palo Alto, San Mateo County Flood Control District, and the Santa Clara Valley Water District

San Francisquito Creek Flood Early Warning System

REQUEST FOR PROPOSALS

The San Francisquito Creek Joint Powers Authority (SFCJPA) is a government agency serving an approximately 50-square-mile area of San Mateo and Santa Clara Counties, with an emphasis on the cities of East Palo Alto, Menlo Park, and Palo Alto. The SFCJPA is soliciting proposals from qualified individuals or firms (Consultant) to design and implement a Flood Early Warning System that will inform government agencies, emergency responders, and the public of the likelihood of flooding resulting from San Francisquito Creek.

PROPOSALS MUST BE SUBMITTED by October 4, 2013 at 2:00 pm local time by email to:

Kevin Murray, Project Manager
kmurray@sfcjpa.org

Proposals are to be submitted in MS Word or PDF format, and are limited to 10 pages, font size 11, including any supporting materials. Proposal shall be valid for at least ninety (90) days.

Proposals should include the following items/information:

- a cover letter with contact information;
- statement of approach to the project, and any suggested modifications to the tasks;
- project schedule and work plan;
- list of team members assigned to the project, their role on the project, and experience relevant to their role;
- description of previously completed projects of similar scope and scale;
- list of any subcontractors, their role, and personnel assigned to the project; and
- itemized fee schedule in a separate, sealed envelope.

Consultants interested in submitting a proposal for this contract are encouraged to contact the Project Manager to discuss the project prior to submittal.

Anticipated Selection Process Timeline:

RFP Issuance	September 16, 2013
Proposals Due	**October 4, 2013**
Interviews	October 8-10, 2013
Consultant Selection	October 10, 2013
Contract Negotiations	October 17-19, 2013
Pre-Contract meeting	October 23, 2013
Contract Execution	**October 24, 2013**

Project Scope of Work and Tasks

Background

The San Francisquito Creek watershed encompasses a 45-square-mile basin, extending from Skyline Boulevard to San Francisco Bay. The watershed includes public lands and numerous private landowners in the cities of East Palo Alto, Menlo Park, Palo Alto, Portola Valley and Woodside, unincorporated areas of San Mateo and Santa Clara counties, and Stanford University.

The creek represents the boundary between the two counties in the lower watershed. The last relatively unaltered urban creek system in the South Bay, San Francisquito Creek begins at the confluence of Corte Madera Creek and Bear Creek, just below Searsville Dam in Stanford University's Jasper Ridge Biological Preserve. The mouth of the creek opens to the San Francisco Bay adjacent to the Palo Alto Airport and the Baylands Nature Preserve. The system contains over 71 miles of creek bed; the main stem is 14 miles long.

The lower reach of the creek runs through urbanized areas and bisects an approximately 5-square mile floodplain that extends from San Francisco Bay to Middlefield Road. In 1998 the creek overbanked, causing damage to approximately 1,700 homes and businesses in Palo Alto, East Palo Alto, and Menlo Park. In response to the 1998 event, local jurisdictions formed the San Francisquito Creek Joint Powers Authority in May of 1999; founding members of the SFCJPA are the cities of East Palo Alto, Menlo Park and Palo Alto, the Santa Clara Valley Water District and the San Mateo County Flood Control District. Flooding has occurred numerous times before and after the 1998 event, most recently in December 2012.

Following the flood of record in 1998, the City of Palo Alto established a website to provide a snapshot of current conditions and advance warning using a network of rainfall and water surface elevation transponders maintained by the City and other agencies in the San Francisquito Creek watershed. This Creek Monitor web page is at:
http://www.cityofpaloalto.org/gov/depts/pwd/creek_monitor/creek_monitor_only.asp.

While this system of monitors and the website have enhanced the ability of the public and emergency responders to predict if and when flooding may occur, the system is deficient in key areas. The one operational rain gauge captures rainfall data for only about 15% of the watershed that contributes to flow within the creek. Furthermore, in a creek where water can rise very rapidly, the primary stream flow gauge transmits data only once every 15 minutes and is not far enough upstream to provide sufficiently advance notice. Finally, these devices and the water surface elevation monitors in the flood-prone areas utilize varied and outdated technologies.

Description of the Project

In January of 2013, the SFCJPA brought together the City of Palo Alto, Santa Clara Valley Water District, and Stanford University to respond to these deficiencies. The San Mateo County Office of Emergency Services, Menlo Park Fire Protection District, and cities of East Palo Alto and Menlo Park will also participate in this project.

These project partners are engaged in three simultaneous efforts: 1) collecting weather, rainfall and stream flow information that provides additional data points and advanced notice and integrates that data into a single source of information; 2) interpreting this collected information to anticipate when and where the creek may overtop and where water is likely to go; and 3) creating online and other communications tools that describe the anticipated threat so that responders and the public can take appropriate action before a flood strikes.

The SFCJPA and its partners are poised to significantly advance the first of these three efforts (data collection and integration) by purchasing and installing new rain and stream flow gauges across the upper watershed. Through this RFP, the SFCJPA seeks a Consultant to provide technical and professional expertise to recommend appropriate equipment and transmission type given the needs and characteristics of the area, and to create a customized system that harmonizes data collection technologies and integrates it into a single source of information.

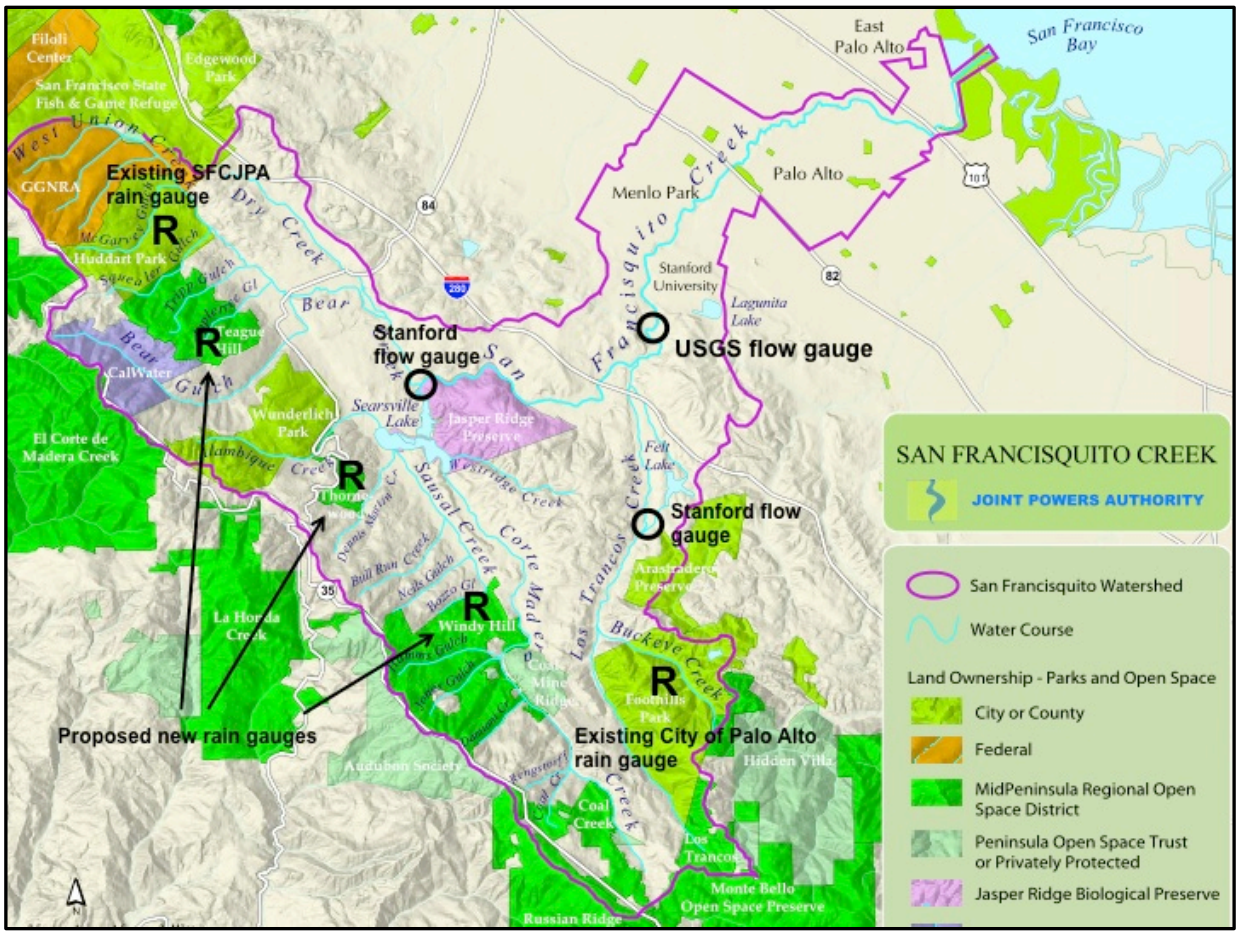
Description of Project Tasks

Task 1: Project Management

The selected consultant will have significant and demonstrable experience in project management for efforts of similar scale and objective. The Consultant will be responsible for the scoping, performance, and delivery of Tasks 2 - 7, and as such, will be expected to provide significant professional advice and direction towards completion of the Project. The SFCJPA and other partners will provide all relevant documentation, access to existing data collection sites, websites, and software applications to assist Consultant in the completion of the Project.

Task 2: Site Determination

The SFCJPA has conducted preliminary investigations and received property owner approval for additional rain gauges needed to implement the project. The image below shows 3 possible locations for new rain gauges to be installed by the Consultant. The Consultant will be expected to advise on the appropriate number and location of the new gauges to be installed, based upon several factors, which include: recommended coverage, feasibility of installation and operation of a rain gauge at each site, accessibility for periodic maintenance of the gauge, and location appropriateness for type of transmission recommended by Consultant.



Task 3: Equipment Purchase and Installation

For purposes of preparing a proposal, applicants should anticipate the need to purchase and install at least one new rain gauge and/or recommend gauges to be installed by the project partners that will be integrated into the new system. There are two existing rain gauges within the San Francisquito watershed that will be available for integration in to the new system, both shown in Figure 1 above. One is an ALERT rain gauge purchased by the SFCJPA and installed by the San Mateo County OES in 2010, located in Huddart Park. The second is a somewhat antiquated rain gauge owned and operated by the City of Palo Alto, located in Foothills Park. It may be necessary to replace and/or relocate the Foothills Park rain gauge, depending on the technology and system recommended by the Consultant.

Task 4: Integration of New and Existing Technologies

The Consultant will assess the rain and stream gauge technologies, and create a customized system for the transmission of data to a new base station to be located at Palo Alto City Hall. The Consultant will install a new ALERT receiver, decoder and computer to be furnished by the SFCJPA, and will ensure that operational redundancies are built into the new system.

Task 5: Base Station, Website and Instant Message System

The Consultant will program the base station equipment, and write the code needed to synthesize data inputs for distribution. An existing USGS stream gauge will be upgraded and reprogramed to transmit data every 60 seconds when an established threshold stream flow is recorded, and every minute thereafter until flow drops below the threshold. Public officials and key response personnel will be connected to the USGS WaterNow system for this gauge, which will send a text message to their cell phone when threshold flows are reached, and every minute after that with updated flow information until flows drop below the threshold. This will provide for 24/7 monitoring of flow conditions by all agency staff.

Task 6: System Monitoring and Maintenance (over 10 years)

Palo Alto will provide space to host the base station computer, and City IT staff will monitor its operation. Staff from the City of East Palo Alto, City of Menlo Park, and San Mateo County Office of Emergency Services will regularly check the online data feeds and website displays and inform Palo Alto and the SFCJPA if the website or displays are not functioning properly. The Consultant will provide for field maintenance activities on the new rain gauges, and periodic visits, as needed, to Palo Alto City Hall to access and maintain the Base Station and display/distribution systems. This effort is expected to be minimal as long as the equipment is working, but will include annual inspections as part of the consultant's regular activities. Applicants should anticipate up to 20 hours per year for system monitoring and maintenance.

Task 7: Hydrologic and Hydraulic Model Calibration (annually for 10 years)

The Santa Clara Valley Water District will use archived data from the system to annually calibrate the Hydrologic Model created for the watershed, as well as the HEC-RAS Hydraulic Model created by the U.S. Army Corps of Engineers. Annual calibration and update to these models will refine the ability to effectively predict flood risks, and account for changing streambed conditions over time. The consultant may be asked to assist in this effort, up to 10 hours per year for annual model calibration.

Task 8: Create Interactive Website (Optional Task Service)

The Consultant will also create an interactive website, available to agency staff and the public that will have real time displays (charts, graphs, and area map) of current and past rainfall, stream flow, and water surface elevation at each of the data collection sites. The SFCJPA has created a template for the new interactive website, available at the following link: http://sfcjpa-ews.org/.

Project Deliverables

1. Rainfall and Stream Flow gauge ALERT or similar system for San Francisquito Creek Watershed.

2. Interactive Website displaying real time data from all collection sites (Optional Task Service).

3. Operations and Maintenance Plan that describes how to inspect and maintain field data collection sites, base station, and display/distribution system.

4. Informational flyer to be distributed to stakeholders informing them of the new system, website, and how to monitor the displays themselves to increase awareness and preparedness.

5. Periodic progress reports, to accompany consultant invoices, to advise the SFCJPA of project progress, anticipated deliverable dates, and any needed assistance in completing the project tasks and final deliverables. Progress reports should be in a format and contain sufficient information to provide for the requirements of the Flood Emergency Response Projects Statewide Grant Program administered by the California Department of Water Resources and funded through Proposition 84 of The Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006.
   http://bondaccountability.resources.ca.gov/p84.aspx