



## Legislation Details (With Text)

**File #:** 2021-1295  
**Type:** Consent Calendar Item      **Status:** Agenda Ready  
**File created:** 11/2/2021      **In control:** Sonoma County Water Agency  
**On agenda:** 12/14/2021      **Final action:**  
**Title:** Agreements Related to Advanced Quantitative Precipitation Information System Project  
**Sponsors:** Sonoma County Water Agency  
**Indexes:**  
**Attachments:** 1. Summary Report

Date	Ver.	Action By	Action	Result
12/14/2021	1	Board of Supervisors	Approved as recommended	Pass

**To:** Board of Directors, Sonoma County Water Agency  
**Department or Agency Name(s):** Sonoma County Water Agency  
**Staff Name and Phone Number:** Jake Spaulding 707-524-8373  
**Vote Requirement:** Majority  
**Supervisorial District(s):** Countywide

**Title:**  
Agreements Related to Advanced Quantitative Precipitation Information System Project

### Recommended Action:

- A) Authorize Sonoma County Water Agency's General Manager to execute the first amended and restated amended agreement with the Board of Governors of the Colorado State University System Cooperative Institute for Research in the Atmosphere, in a form approved by County Counsel, for system design and implementation. The amended agreement extends the agreement term by two years for a new end date of March 31, 2024, with no change to the agreement amount.
- B) Authorize Sonoma County Water Agency's General Manager to execute the first amended and restated amended agreement with the Board of Governors of the Colorado State University System - Cooperative Institute for Research in the Atmosphere, in a form approved by County Counsel, for reimbursement of travel expenses related to design and implementation. The amended agreement extends the agreement term by two years for a new end date of March 31, 2024, with no change to the agreement amount.
- C) Authorize Sonoma County Water Agency's General Manager to execute the first amended Memorandum of Understanding, in a form approved by County Counsel, with U.S. Department of Commerce National Oceanic and Atmospheric Administration for system integration and coordination. The amended agreement extends the agreement term by two years for a new end date of December 31, 2023, with no change to the agreement amount.
- D) Authorize Sonoma County Water Agency's General Manager to execute the first amended and restated amended agreement with United States Geological Survey, in a form approved by County Counsel, for operational modeling of coastal flooding along the San Francisco Bay margin. The amended agreement extends the agreement term by two years for a new end date of December 31, 2023, with no change

to the agreement amount.

- E) Authorize Sonoma County Water Agency's General Manager to execute the first amended and restated amended agreement with Jennifer Krebs dba Jennifer Krebs Environmental Planning, in a form approved by County Counsel, for project coordination services. The amended agreement increases the amount by \$100,000 for continuation of existing tasks and extends the agreement term by 30 months for a new not-to-exceed agreement total of \$350,000 and end date of June 30, 2024.
- F) Authorize Sonoma County Water Agency's General Manager to execute the first amended and restated agreement with Bay Planning Coalition, in a form approved by County Counsel, for stakeholder outreach coordination. The amended agreement increases the amount by \$60,000 and extends the agreement term by two years for a new not-to-exceed agreement total of \$360,000 and end date of December 31, 2023.
- G) Authorize Sonoma County Water Agency's General Manager to execute the first amended and restated cooperative agreement with five East Bay agencies: East Bay Municipal Utility District, Alameda County Flood Control & Water Conservation District, Alameda County Water District, East Bay Dischargers Authority, and Contra Costa County Flood Control and Water Conservation District, in a form approved by County Counsel, to provide funding to Sonoma County Water Agency for temporary deployment of precipitation forecasting system. The amended agreement changes the payment terms to allow parties to be credited for certain expenses incurred in advancing the project and extends the agreement term by two years for a new end date of December 31, 2023, with no change to the agreement amount.

#### **Executive Summary:**

Sonoma County Water Agency (Sonoma Water) has been awarded \$19.84 million in grant funds to implement the San Francisco Bay Area Advanced Quantitative Precipitation Information System project (AQPI Project). Costs incurred by Sonoma Water in implementing the AQPI Project and associated agreements will be reimbursed with these grant funds or by local project partners.

The purpose of the AQPI Project is to provide more precise rainfall forecasting for atmospheric rivers, which will give flood control managers including Sonoma Water, emergency responders, transportation officials, and media outlets more precise information on the location, timing, and intensity of expected rainfall.

The AQPI Technical Advisory Committee is comprised of National Oceanic and Atmospheric Administration (NOAA), Colorado State University's Cooperative Institute for Research in the Atmosphere (CIRA), Center for Western Weather and Water Extremes at Scripps Institute of Oceanography (Scripps), United States Geological Survey - Pacific Coast and Marine Science Center (USGS), Jennifer Krebs dba Jennifer Krebs Environmental Planning, Bay Planning Coalition, and the local project partners that include, but are not limited to, Sonoma Water, San Francisco Public Utilities Commission, Santa Clara Valley Water District, East Bay Municipal Utility District, Alameda County Flood Control & Water Conservation District, Alameda County Water District, East Bay Dischargers Authority, Contra Costa County Flood Control and Water Conservation District, and the Bay Area Flood Protection Agencies Association.

Implementation of the AQPI Project has been affected by several back-to-back disasters including the major wildfires affecting the Bay Area in 2017, 2019, and 2020 as well as the COVID-19 global pandemic. The AQPI Project also suffered delays related to the 2018-2019 federal government shutdown. This item presents for consideration and approval six amended agreements and one amended memorandum of understanding (MOU) with technical partners to continue the work funded by the grant award.

#### **Discussion:**

## HISTORY

For more than ten years, Sonoma Water and several other agencies in the Bay Area have collaborated with NOAA, CIRA, Scripps, and USGS to develop the AQPI Project. The goal of the AQPI Project is to provide early notification of more precise rainfall location, intensity, and amounts for the improved management of water supply reservoirs, the improved operations of combined sewer and wastewater systems, the improved operations of flood protection facilities, and a myriad of other benefits to transportation and emergency response agencies. According to a cost-benefit analysis performed by NOAA, implementing the AQPI Project can be expected to provide benefits exceeding costs by a ratio of at least 4:1. These benefits accrue through a) avoided flood damage costs from early warnings, b) forecast-based operations to maximize reservoir capture for water supply and fisheries flows, c) minimization of water quality impacts from combined wastewater and sewer systems, and d) enhancement of public safety for the various transportation modes (pedestrian, highways, marine, and airports).

On January 13, 2016, the Department of Water Resources announced statewide Proposition 84 (The Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006) grant awards that include over \$43 million for water resources-related projects in the San Francisco Bay Area. Nearly half, or \$19.84 million, will go towards funding the AQPI Project.

The AQPI Project is a six-year project to provide improved precipitation and hydrologic information to water agencies and other stakeholders in the San Francisco Bay area to assist the region in mitigating flood hazards, maximize water supply, and enhance ecosystem services. The primary emphasis will be to improve short-term (48 hour) monitoring and prediction of high-impact rainfall events. The secondary emphasis will focus on improved medium-range precipitation forecasts (out to 10 days) for water supply.

The grant funding will be used to place up to five new radar units throughout the Bay Area, specifically to provide more precise rainfall forecasting for atmospheric rivers. It is estimated that over the last few decades more than 50 percent of major flooding in the Bay Area, and closer to 70 percent in the North Bay, has come from atmospheric rivers that often are not detected with conventional, high-aiming S-band, or NEXRAD, radar units that were originally designed for thunderstorms in the Midwest. The new radar system also will give flood control managers, emergency responders, transportation officials, and media outlets more precise information on just where, when, and the intensity of expected rainfall.

Local project partners will host radar sites when site surveys are finalized during the course of the AQPI Project. Current local project partners include Santa Clara Valley Water District, San Francisco Public Utilities Commission, and the Bay Area Flood Protection Agencies Association, as well as Sonoma Water.

## AGREEMENTS WITH CIRA

### Design and Implementation

On July 1, 2016, Sonoma Water and CIRA entered into an agreement in the amount of \$9,944,053 for system design and implementation services. Tasks under the agreement included the following: install, startup, and operate the X-band and C-band radar systems; provide training on the radar systems; develop system software; and integrate applications to AQPI system. Services provided are eligible for reimbursement with grant funds.

Implementation of the AQPI Project has been affected by several back-to-back disasters including the major

wildfires affecting the Bay Area in 2017, 2019, and 2020 as well as the COVID-19 global pandemic. The AQPI Project also suffered delays related to the 2018-2019 federal government shutdown. As of result of these disruptions, site selection for radar deployments suffered delays and only two of the five planned radar deployments have occurred. A third deployment is scheduled for this calendar year with the remaining radar deployments scheduled for 2022 and 2023.

Under the amended agreement, CIRA will continue to provide these services. The amended agreement extends the term by two years for a new end date of March 31, 2024, with no change to the agreement amount.

#### Travel Expenses

On July 1, 2016, Sonoma Water and CIRA entered into an agreement in the amount of \$153,000 (\$38,250 per partner) to fund necessary travel by CIRA staff for radar site identification, environmental reviews, installation, deployment, and other activities related to the design and implementation of the AQPI Project. Travel expenses are not eligible for reimbursement under the grant program. Costs incurred by Sonoma Water under this agreement will be shared by local project partners including San Francisco Public Utilities Commission, Santa Clara Valley Water District, East Bay Municipal Utility District, Alameda County Flood Control & Water Conservation District, Alameda County Water District, East Bay Dischargers Authority, Contra Costa County Flood Control and Water Conservation District, and the Bay Area Flood Protection Agencies Association.

The amended agreement extends the term by two years for a new end date of March 31, 2024, with no change to the agreement amount.

#### MOU WITH NOAA

On August 17, 2017, Sonoma Water and NOAA entered into an MOU in the amount of \$6,596,159 for system integration and coordination. Tasks under the MOU, with NOAA acting as the technical lead, included the following: direct technical aspects of the AQPI Project in conjunction with the Technical Advisory Committee, develop the AQPI system architecture, design and develop high-resolution and medium-range precipitation forecast products, integrate software systems, and develop a tailored AQPI user interface to display and deliver meteorological products.

Implementation of the AQPI Project has been affected by several back-to-back disasters including the major wildfires affecting the Bay Area in 2017, 2019, and 2020 as well as the COVID-19 global pandemic. The AQPI Project also suffered delays related to the 2018-2019 federal government shutdown. As of result of these disruptions, radar deployments (done in conjunction with CIRA), other surface instrumentation deployments, and system development have been delayed.

Under the amended MOU, NOAA will continue to provide these services. The MOU extends the term by two years for a new end date of December 31, 2023, with no change to the agreement amount.

#### AGREEMENT WITH USGS

On March 13, 2018, Sonoma Water and USGS entered into an agreement in the amount of \$1,171,000 for operational modeling of coastal flooding along the San Francisco Bay margin. Tasks under the agreement included the following: extend USGS's current coastal storm modeling system for high-resolution

representation that will be compatible with NOAA's gridded hydrologic model and detailed flood mapping; work with NOAA to interface the two models; and develop additional modeling tools, system testing, and training.

Implementation of the AQPI Project has been affected by several back-to-back disasters including the major wildfires affecting the Bay Area in 2017, 2019, and 2020 as well as the COVID-19 global pandemic. The AQPI Project also suffered delays related to the 2018-2019 federal government shutdown. USGS has substantially completed its tasks under the agreement but due to the extension required for NOAA to complete the system, seeks to extend its agreement to ensure the USGS modeling system runs correctly when the system is complete.

Under the amended agreement, USGS will continue to provide these services. The amended agreement extends the agreement term by two years for a new end date of December 31, 2023, with no change to the agreement amount.

#### AGREEMENT WITH JENNIFER KREBS DBA JENNIFER KREBS ENVIRONMENTAL PLANNING

This work was originally to be completed by Morrison & Associates under Sonoma Water agreement TW 16/17-032, which was approved by the Board on August 15, 2017. After Mr. Morrison's death, his family closed his firm. Jennifer Krebs, who was listed as a key person under agreement TW 16/17-032, formed her own company.

On October 1, 2018, Sonoma Water and Jennifer Krebs dba Jennifer Krebs Environmental Planning (Consultant) entered into an agreement in the amount of \$250,000 for project coordination services. Tasks under the agreement included the following: meeting coordination, grant management assistance, siting and permitting assistance, and some public outreach tasks.

Implementation of the AQPI Project has been affected by several back-to-back disasters including the major wildfires affecting the Bay Area in 2017, 2019, and 2020 as well as the COVID-19 global pandemic. The AQPI Project also suffered delays related to the 2018-2019 federal government shutdown. Consultant has successfully completed all tasks under the agreement but due to the delays with radar implementation, services are required for an additional two years.

Under the amended agreement, Consultant will continue to provide these services. The additional cost is \$100,000, for a new not-to-exceed agreement total of \$350,000. The term end date is extended by 30 months for a new end date of June 30, 2024.

#### AGREEMENT WITH BAY PLANNING COALITION

The majority of this work was also originally to be completed by Morrison & Associates under TW 16/17-032. Morrison & Associates completed the initial outreach to local partner agencies involved with water supply, flood control, storm water, and wastewater, but considerable work remained. A sole source waiver was obtained for the Bay Planning Coalition to finish the tasks due to its unique ability to immediately communicate with key Bay Area stakeholders under a tight timeline and budget.

On August 1, 2018, Sonoma Water and Bay Planning Coalition entered into an agreement in the amount of

\$300,000 for outreach coordination services. Tasks under the agreement included the following: attend meetings, identify stakeholders, develop stakeholder advisory committee, perform stakeholder outreach and communications, monitor related trends and issues, and provide monthly reports.

The majority of the work envisioned under the agreement has been completed. However, additional work remains due to delays associated with deploying the AQPI system.

Under the amended agreement, Bay Planning Coalition will continue to provide these services. The additional cost is \$60,000, for a new not-to-exceed agreement total of \$360,000. The term end date is extended by two years for a new end date of December 31, 2023.

#### AGREEMENT WITH EAST BAY AGENCIES

On March 13, 2018, Sonoma Water entered into a cooperative agreement in the amount of \$165,000 (paid to Sonoma Water) with the following five East Bay agencies: East Bay Municipal Utility District, East Bay Dischargers Authority, Alameda County Flood Control and Water Conservation District, Alameda County Water District, and Contra Costa County Flood Control and Water Conservation District (Participants).

Under the cooperative agreement, Sonoma Water's tasks included the following: coordinate the installation of precipitation forecasting equipment; coordinate and procure data analysis consulting services; prepare and negotiate a lease agreement with American Towers for the purpose of siting and accessing the precipitation forecasting equipment; provide contract administration, for an amount not to exceed a total of \$165,000; and ensure that data from the precipitation forecasting equipment and analysis of that data is provided to the Participants in a format the Participants are able to use.

Each Participant deposited the amounts listed below with Sonoma Water to cover its anticipated pro-rata share of contract costs and expenses:

- East Bay Municipal Utility District: \$45,000
- Alameda County Flood Control & Water Conservation District: \$40,000
- Alameda County Water District: \$31,000
- East Bay Dischargers Authority: \$29,000
- Contra Costa County Flood Control and Water Conservation District: \$20,000

Implementation of the AQPI Project has been affected by several back-to-back disasters including the major wildfires affecting the Bay Area in 2017, 2019, and 2020 as well as the COVID-19 global pandemic. The AQPI Project also suffered delays related to the 2018-2019 federal government shutdown. These disruptions affected the AQPI Project's schedule as travel restrictions delayed site selection/design. Furthermore, due to these complications and in consultation with the Participants, Contra Costa County Flood Control and Water Conservation District hired contractors/consultants to complete several tasks originally envisioned for Sonoma Water. Accordingly, the agreement partners would like to modify the payment terms to credit Contra Costa County Flood Control and Water Conservation District for its in-kind contributions to the AQPI Project.

Under the amended agreement, Sonoma Water will continue to provide these services, but Participants will also be able to be credited for certain expenses they have incurred related to AQPI Project completion. The amended agreement extends the agreement term by two years for a new end date of December 31, 2023,

with no change to the agreement amount.

#### TIME EXTENSIONS

The amended agreements include two options for Sonoma Water to extend each amended agreement for a period of one year each by providing written notice to the other party thirty days in advance of the expiration date of the first amended agreement and of the first extension option.

#### Strategic Plan:

This item directly supports the County's Five-year Strategic Plan and is aligned with the following pillar, goal, and objective.

**Pillar:** Resilient Infrastructure

**Goal:** Goal 5: Support, fund, and expand flood protection.

**Objective:** Objective 1: Develop partnerships with cities, tribal governments, and private organizations regarding flood protection and sustainability to identify gaps and address climate change impacts.

The AQPI Project supports Sonoma County's efforts to partner with other local entities in order to prepare, mitigate, and prevent community impacts caused by emergencies and natural disasters including, but not limited to, flood protection and other adverse effects from heavy precipitation events.

#### Sonoma Water Strategic Plan Alignment

Flood Protection, Goal 1: Provide efficient and effective flood protection programs.

Climate Change, Goal 1: Continuing improving our ability to respond and adapt to climate change.

Our Organization, Goal 3: Continue to improve emergency preparation and response to natural disasters.

The AQPI Project supports several of the goals in the Sonoma Water Strategic Plan. The AQPI Project will improve Sonoma Water's ability to respond to and adapt to the effect's climate change is having on precipitation patterns in the region. The AQI Project will improve early warning capabilities to avoid life-safety threats from potential land sliding, debris flows, flooding, erosion, road hazards, and burn scar problems that could be compounded from heavy rain events.

#### Prior Board Actions:

04/20/2021: Approved agreement between Sonoma Water, East Bay Municipal Utility District, Alameda County Flood Control & Water Conservation District, Alameda County Water District, East Bay Dischargers Authority, and Contra Costa County Flood Control and Water Conservation District for temporary deployment of precipitation forecasting system. Cost \$165,000 (funds paid to Sonoma Water); term end December 31, 2021.

11/13/2018: Approved agreement between Sonoma Water and Jennifer Krebs dba Jennifer Krebs Environmental Planning for project coordination services. Cost \$250,000; term end December 31, 2021.

11/13/2018: Approved agreement between Sonoma Water and Bay Planning Coalition, in a form approved by County Counsel, for stakeholder outreach coordination. Cost \$300,000; term end December 31, 2021.

08/15/2017: Approved agreement between Sonoma Water and Board of Governors of the Colorado State University System - Cooperative Institute for Research in the Atmosphere for system design and

implementation. Cost \$9,944,053; term end December 31, 2021.

08/15/2017: Approved agreement between Sonoma Water and Board of Governors of the Colorado State University System - Cooperative Institute for Research in the Atmosphere for reimbursement of travel expenses related to design and implementation. Cost \$153,000 (\$38,250 per partner); term end December 31, 2021.

08/15/2017: Approved agreement between Sonoma Water and U.S. Department of Commerce National Oceanic and Atmospheric Administration for system integration and coordination. Cost \$6,596,159; term end December 31, 2021.

08/15/2017: Approved agreement between Sonoma Water and United States Geological Survey for operational modeling of coastal flooding along the San Francisco Bay margin. Cost \$1,171,000; term end December 31, 2021

**FISCAL SUMMARY**

<b>Expenditures</b>	<b>FY 21-22 Adopted</b>	<b>FY22-23 Projected</b>	<b>FY 23-24 Projected</b>
Budgeted Expenses		\$136,000	24,000
Additional Appropriation Requested			
<b>Total Expenditures</b>		<b>\$136,000</b>	<b>24,000</b>
<b>Funding Sources</b>			
General Fund/WA GF			
State/Federal		\$136,000	24,000
Fees/Other			
Use of Fund Balance			
Contingencies			
<b>Total Sources</b>		<b>\$136,000</b>	<b>24,000</b>

**Narrative Explanation of Fiscal Impacts:**

AGREEMENT WITH JENNIFER KREBS DBA JENNIFER KREBS ENVIRONMENTAL PLANNING:

FY 2021/2022 appropriations for this agreement are currently encumbered. The amended agreement increase of \$100,000 will be budgeted in FY 2022/2023. Offsetting revenue in the amount of \$100,000 will come from Department of Water Resources Proposition 84 grant project.

AGREEMENT WITH BAY PLANNING COALITION:

FY 2021/2022 appropriations for this agreement are currently encumbered. The amended agreement increase of \$60,000 will be budgeted in FY 2022/2023 and FY 2023/2024. Offsetting revenue in the amount of \$60,000 will come from Department of Water Resources Proposition 84 grant project.

<b>Staffing Impacts:</b>			
<b>Position Title (Payroll Classification)</b>	<b>Monthly Salary Range (A-I Step)</b>	<b>Additions (Number)</b>	<b>Deletions (Number)</b>

**Narrative Explanation of Staffing Impacts (If Required):**

N/A

**Attachments:**

None

**Related Items "On File" with the Clerk of the Board:**

None