



COUNTY OF SONOMA

575 ADMINISTRATION
DRIVE, ROOM 102A
SANTA ROSA, CA 95403

SUMMARY REPORT

Agenda Date: 12/12/2023

To: Board of Directors, Sonoma County Water Agency
Department or Agency Name(s): Sonoma County Water Agency
Staff Name and Phone Number: Todd Schram 707-524-1173
Vote Requirement: Majority
Supervisory District(s): Countywide

Title:

Russian River Post-Wildfire Water Quality Research

Recommended Action:

Authorize Sonoma County Water Agency's General Manager to execute Amendment No. 4 to U.S. Department of the Interior Geological Survey Joint Funding Agreement for Spatial and Temporal Removal of Pathogens and Indicator Organisms within the Riverbank Filtration System, in a form approved by County Counsel. The amendment extends the agreement term by one year at no additional cost for a new end date of September 30, 2024; and consistent with other agreements, authorize Sonoma County Water Agency's General Manager to amend or terminate this agreement with approval of County Counsel.

Executive Summary:

Sonoma County Water Agency (Sonoma Water) in collaboration with the United States Geological Survey, Department of the Interior (U.S. Geological Survey), has developed a water quality monitoring program and post-fire-related research to support assessment of the potential impacts to Sonoma Water's drinking water facilities since the 2017 wildfires in the Russian River watershed. This program includes monitoring and assessing the impacts of the most recent wildfires: the Kincadee Fire in October 2019 and Walbridge Fire in August 2020. Data collected under this program will also provide valuable information to other water supply systems downstream of the affected areas, as well as for studies on potential ecosystem impacts.

Discussion:

Sonoma Water initiated a collaborative research partnership with the U.S. Geological Survey in 2008 to study Sonoma Water's riverbank filtration system on the Russian River that serves as the primary treatment for the drinking water production facilities at Wohler and Mirabel.

This effort has resulted in an enhanced understanding of the characteristics of the physical, chemical, and biological mechanisms that result in high-quality water produced from the Russian River alluvium.

The U.S. Geological Survey has focused on analyzing and characterizing the water and sediment chemistry and microbiology with field and laboratory experiments.

A component of this research included investigating how a wildfire in the watershed may alter the surface water chemistry and physical, chemical, and microbial mechanisms that are integral to the ecosystem function of the Russian River alluvial system.

Since the post-fire water quality monitoring program began after the October 2017 wildfires, the Russian River watershed has been subjected to subsequent wildfires and the importance of studying the impacts of runoff contributions from wildfire burn areas has become more evident.

The progress of work under this agreement has been delayed due to backlogs that developed from the extended period of time that the analytical laboratory was either non-operational or at reduced capacity during the COVID 19 pandemic. Additional time is needed to complete the results of sediment and water quality analyses.

Sonoma Water and U.S. Geological Survey entered into this agreement, dated October 1, 2016, in the amount of \$179,500, and term end date of September 30, 2018.

Amendment No. 1 to the agreement, approved by the Board on July 10, 2018, increased the agreement amount by \$320,045 for a new not-to-exceed total of \$499,545, and extended the agreement by two years to September 30, 2020.

Amendment No. 2 to the agreement, approved by the Board on December 15, 2020, increased the agreement amount by \$382,740 for a new not-to-exceed total of \$882,285, and extended the agreement by two years to September 30, 2022.

Amendment No. 3 to the agreement, approved by the Board on February 28, 2023, added 12 months to the agreement at no additional cost for a new end date of September 30, 2023.

SERVICES TO BE PERFORMED

Under the amendment, the U.S. Geological Survey will continue to provide analytical services and conduct experiments to characterize changes in water and sediment chemistry and microbiology in the Russian River and its tributaries that are downstream of areas subjected to the past wildfires. This work includes characterization of ash collected from the Walbridge Fire to support previous efforts to assess how wildfire ash leachate affects the top layer of river bottom sediments in the vicinity of Sonoma Water's riverbank filtration that serves as a critical treatment mechanism to remove pathogens. Additional tasks include conducting chemical analyses of water and sediment samples from sites impacted by past wildfires, microbiological analyses of microbial communities to assess changes in the water column and river sediments, and the study of the relationships between microbial communities, environmental variables, and stream flow to examine processes and potential transformations.

This study investigates how water chemistry, and the microbial community may be altered in these sediments. Overall, this research attempts to understand if effects from wildfires alter sediment microbial processes leading to potential impacts on groundwater quality, such as the mobilization of pathogens (e.g., *Cryptosporidium parvum*) and constituents of concern for drinking water (e.g., dissolved metals). Collectively, this research work will enhance Sonoma Water's predictive capabilities in assessing the potential for wildfires to alter the existing efficacy of riverbank filtration in providing high-quality drinking water to its water supply customers.

This amendment extends the agreement term by one year for continuation of the above-described work, and covers services rendered from October 1, 2023 to September 30, 2024. There is no additional cost for this amendment.

REQUEST FOR SONOMA WATER GENERAL MANAGER AMENDMENT AND TERMINATION AUTHORITY

Staff recommend that the Board authorize Sonoma Water's General Manager to amend or terminate the agreement with approval of County Counsel.

County of Sonoma Strategic Plan Alignment

N/A

Sonoma Water Strategic Plan Alignment

Goal: Environmental Stewardship

Strategy: Protect, enhance, and monitor natural resources, watershed conditions, and ecosystem health that are vital to the Russian River, Petaluma River, and Sonoma Creek watersheds.

Action: Conduct fisheries, wildlife, and water quality monitoring through existing programs and use of new technologies.

This work will help Sonoma Water understand how environmental drivers, like drought and climate change, impact Sonoma Water's riverbed filtration (RBF) system that is used to provide treatment of the water supply. Results will guide strategies to ensure future RBF system reliability and resilience to protect the region's drinking water supply.

Racial Equity:**Was this item identified as an opportunity to apply the Racial Equity Toolkit?**

No

Prior Board Actions:

02/28/2023: Approved third amendment to agreement between Sonoma Water and U.S. Geological Survey. No cost; term end September 30, 2023.

12/15/2020: Approved second amendment to agreement between Sonoma Water and U.S. Geological Survey. Cost \$882,285; term end September 30, 2022.

09/27/2016: Approved agreement between Sonoma Water and U.S. Geological Survey. Cost \$179,500; term end December 31, 2019.

FISCAL SUMMARY

Expenditures	FY23-24 Adopted	FY24-25 Projected	FY25-26 Projected
Budgeted Expenses			
Additional Appropriation Requested			
Total Expenditures			
Funding Sources			
General Fund/WA GF			
State/Federal			
Fees/Other			
Use of Fund Balance			

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General Fund Contingencies			
Total Sources			

Narrative Explanation of Fiscal Impacts:

There is no fiscal impact associated with this agenda item.

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

Narrative Explanation of Staffing Impacts (If Required):

N/A

Attachments:

None

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

On File