



Legislation Text

File #: 2022-0764, **Version:** 1

To: Board of Directors, Sonoma County Water Agency
Department or Agency Name(s): Sonoma County Water Agency
Staff Name and Phone Number: John Mendoza 707-547-1929
Vote Requirement: 4/5th
Supervisory District(s): Countywide

Title:

Natural Hazard Mitigation Study Update

Recommended Action:

- A) Authorize Sonoma County Water Agency's General Manager to execute an agreement with InfraTerra, Inc., in a form approved by County Counsel, for seismic assessment and upgrade recommendations through July 31, 2025, in the not-to-exceed amount of \$762,672.
- B) Adopt a Resolution Authorizing Adjustment to the Board Adopted Budget for Fiscal Year 2022-2023 for the Water Transmission O&M Fund in the amount of \$212,672 for the Natural Hazard Mitigation Study Update.

(4/5th Vote Required)

Executive Summary:

In alignment with recommendations from Sonoma County Water Agency's (Sonoma Water) Natural Hazard Reliability Assessment (NHRA) updated in spring 2022 for its water transmission system, further detailed studies are recommended to reduce the uncertainty of impacts to the system due to seismic events. The results from these studies will inform recommendations for mitigation actions for the upcoming 2023 Local Hazard Mitigation Plan (LMHP) update, provide information for emergency response planning, and provide input to the Russian River Regional Water Supply Resiliency Study. Information and recommendations from these studies will improve the resiliency of the water system.

Discussion:

HISTORY OF ITEM/BACKGROUND

In 2004 Sonoma Water initiated a natural hazard reliability improvement program for its water supply system. This kicked off a three-year NHRA that identified how natural hazards could impact the system. Based on this assessment, recommended actions were developed to mitigate the potential impacts.

This assessment led to the preparation of a LHMP in 2007 that identified the highest priority reliability projects to pursue for mitigation actions. The LHMP was adopted by Sonoma Water's Board of Directors and approved by the Federal Emergency Management Agency (FEMA) in 2008. The LHMP enables Sonoma Water's eligibility for FEMA federal hazard mitigation grant funds. The LHMP was updated in 2013 and 2018 so that Sonoma Water could retain its eligibility for FEMA grant funds.

In April 2020, Sonoma Water entered into an agreement with InfraTerra, Inc. (Consultant) to update the

original 2008 NHRA. The update included an analysis of the areas of the water system that were most susceptible to disruption during an earthquake, as well as the development of estimates for how long it would take to repair the disruption. Consultant reviewed the 2018 LHMP and completed additional studies characterizing the vulnerabilities of the water system and made the following findings and recommendations:

- Based on analyses of regional level geologic and seismic hazard maps, multiple leaks and breaks throughout the Sonoma Water aqueduct system could occur in future large earthquakes. Evaluation of system outage following a major earthquake shows that it could take months to restore the system. There is significant uncertainty associated with the estimated pipeline repair durations resulting from lack of site-specific geotechnical data. Conducting targeted geotechnical investigations to obtain site-specific data can constrain the hazard and develop more accurate outage time estimates.
- Previous studies showed significant liquefaction-induced lateral spread hazard to the collector wells. Feasible mitigation options from the more recent study completed in 2022 include a secant pile ring wall for collectors with buried caissons, and a fiber wrap on the inside for collectors with partially above-ground caissons.
- Sonoma Water has initiated a tank recoating project for 18 steel storage tanks, with four completed or commenced as of May 2022. Seismic evaluation of the tanks was last completed in 2005 as part of the original NHRA study. Additionally, Sonoma Water's tanks provide critical storage in the system. Due to these factors, a re-evaluation of seismic vulnerability of the tanks has been recommended to be performed concurrently with the recoating project.
- Sonoma Water would benefit from a decision support system that would assist in prioritization of mitigation projects and alternative strategies for improved seismic resiliency.

In addition to the findings and recommendations above, information provided by Consultant's update to the NHRA will support the Regional Water Supply Resiliency Study (Resiliency Study) currently being conducted. The objective of the Resiliency Study is to develop a regional water supply decision support tool that can be used to evaluate strategies and water supply projects to improve integrated water resources management and make Sonoma Water's service area more resilient to potential short and long-term water shortages. The decision support tool will be a planning level model framework that will consider the built infrastructure, water supplies, and operations of Sonoma Water and the cities and water districts (water contractors) served by Sonoma Water.

SELECTION PROCESS

Consultant was selected from a list of qualified consultants developed from a competitive selection process. Attachment 2 summarizes the competitive selection process.

Consultant was selected for the subject work because of the Consultant's expertise in assessing seismic hazards in water transmission systems. Consultant has successfully completed previous work for Sonoma Water's LHMP and NHRA. Through these projects, Consultant has gained knowledge of Sonoma Water's transmission system that will assist with the work under this proposed agreement.

Sonoma Water may seek to amend or enter into subsequent agreement(s) with Board approval if required, relying upon this competitive selection process, after the preliminary or initial work is completed.

SERVICES TO BE PERFORMED

Under the proposed agreement, Consultant will provide targeted geotechnical investigations of Sonoma Water's water transmission system to quantify liquefaction risk, recommendations for pipeline repair and effective strategies for reducing restoration time following a seismic event, reporting, workshops, pre-design development of collector well retrofits, seismic evaluation on the remaining 14 of 18 Sonoma Water tanks, assistance with the development of a decision support tool, assistance with developing scenarios for the Regional Water Supply Resiliency Study, and present findings of updated NHRA to Sonoma Water contractors.

The cost of services will not exceed \$762,672; the term end date is July 31, 2025.

The agreement includes two options for Sonoma Water to extend this agreement for a period of one year each by providing written notice to consultant thirty days in advance of the expiration date of the agreement and of the first extension option.

County of Sonoma Strategic Plan Alignment: N/A

Sonoma Water Strategic Plan Alignment

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

The agreement includes refining the transmission system outage times due to seismic events. These more accurate outage time estimates will help Sonoma Water plan for necessary emergency responses due to seismic event.

Prior Board Actions:

04/07/2020: Approved agreement between Sonoma Water and InfraTerra, Inc. for seismic and natural hazard reliability assessment. Cost \$300,000; term end March 23, 2023.

10/9/2018: Adopted a Resolution approving the Sonoma County Water Agency 2018 Local Hazard Mitigation Plan.

FISCAL SUMMARY

Expenditures	FY 22-23 Adopted	FY23-24 Projected	FY 24-25 Projected
Budgeted Expenses	\$550,000		
Additional Appropriation Requested	\$212,672		
Total Expenditures	\$762,672		
Funding Sources			
General Fund/WA GF			
State/Federal			
Fees/Other	\$500,000		
Use of Fund Balance	\$212,672		
Contingencies			
Total Sources	\$762,672		

Narrative Explanation of Fiscal Impacts:

Budgeted amount of \$550,000 is available from FY 2022/2023 appropriations for the Water Transmission O&M Fund. Additional appropriations in the amount of \$212,672 from the Water Transmission O&M Fund are required to process this expense. With Board approval, unspent appropriations budgeted in FY 2021/2022 and rolled over to FY 2022/2023 will be made in the Water Transmission O&M Fund pursuant to the attached budgetary resolution. Funding for the consultant contract is the Water Transmission water rates and fund balance.

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:

Attachment 1: Budgetary Resolution

Attachment 2: Selection Process Memorandum

Related Items “On File” with the Clerk of the Board:

None