



Lake Mendocino

# 2020 ANNUAL REPORT



**Sonoma  
Water**

CLEAN. RELIABLE. ESSENTIAL. EVERY DAY.

# WELCOME

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## MESSAGE FROM SUSAN GORIN, CHAIR, BOARD OF DIRECTORS, SONOMA WATER



This past year brought with it several major wildfires on top of a global pandemic, which has challenged every sector of our community. During these trying times, not once has our community had to worry about whether our most basic utility infrastructure needs would be met – including drinking water, wastewater collection and flood control management. And that is because the staff at Sonoma Water work every day and night to ensure our community was taken care of, no matter if it was a wildfire threatening drinking water facilities or the threat of COVID-19 impacting our customers.

Sonoma Water staff continued to provide vital water utility services around the clock and even braved driving beyond wildfire evacuation zones to ensure drinking water facilities were protected. Sonoma Water staff responded to late night power outages due to power shut off events to ensure pump stations were operational. Sonoma Water staff pitched in to help their own to ensure everyone remained safe and healthy due to the pandemic. Not once were drinking water, wastewater or flood protection services interrupted during these crises. We can thank the leadership and true grit of our dedicated Sonoma Water staff for their tenacity in helping our community maintain stability during times of crisis.

On behalf of the Sonoma Water Board of Directors, I'd like to thank Sonoma Water staff for their service to our community and thank our community for allowing us to serve you.

Respectfully,

Susan Gorin  
Chair, Sonoma Water Board of Directors

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## MESSAGE FROM GRANT DAVIS, GENERAL MANAGER, SONOMA WATER



*“We may well remember this year for the tragedies and difficulties it presented. We may also remember it for the examples of strength and resolve it elicited from our colleagues.”*

2020 presented all of us – our agency, our community, our nation – with truly unprecedented challenges. We experienced a worldwide pandemic that has taken many lives and changed our daily life in ways we never could have imagined. In the midst of the COVID-19 pandemic, our nation endured a period of social and political unrest that has shaken our foundations. Add to all of this yet another series of wildfires in the late summer that prompted the activation of our Emergency Operations Center and forced many of our staff members to evacuate their homes.

Throughout these tragic events and crises, Sonoma Water has endured. Our dedicated staff once again rose to the challenge to produce clean drinking water and provide reliable wastewater treatment services. From the outset of the pandemic, and throughout the fires, skilled staff that operate and maintain our facilities adapted and persevered through perilous conditions. The majority of our workforce adapted to teleworking conditions, supported each other and their families. Many of them took on additional home school duties. Despite these challenges, I am proud to say that Sonoma Water maintained a high level of productivity and kept our critical projects and efforts on schedule.

Through it all, our staff has displayed the type of resiliency, compassion and courage that is the hallmark of our agency. I am proud to say that Sonoma Water maintained an uninterrupted delivery of drinking water to its more than 600,000 customers in the North Bay, and safely operated all of its wastewater treatment facilities. Our staff’s preparedness and their willingness to persevere will stand out as we look back on this momentous year. We may well remember this year for the tragedies and difficulties it presented. We may also remember it for the examples of strength and resolve it elicited from our colleagues.

I want to thank the Sonoma Water Board of Directors for their leadership during this past year. In addition, I want to acknowledge our partners, customers and community for their perseverance and the many contributions made in support of our mission.

Grant Davis  
General Manager, Sonoma Water

# EMERGENCY PREPAREDNESS & RESPONSE

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## COVID-19 ADAPTATION

In 2020 Sonoma Water enhanced its emergency management program with the establishment of a formal Emergency Preparedness & Response Section. The new section brought in additional resources, including a managerial level position, to enhance the organization's overall emergency management capabilities across all phases of emergency management: preparedness, response, recovery, and mitigation/prevention.

As in recent years, 2020 continued to bring more disaster events including the COVID-19 pandemic, the Walbridge and Glass wildfires, and several public safety power shutdowns. Through all these events, Sonoma Water's Emergency Operations Center was activated for a total of 170 days, was staffed by all divisions, and maintained a focus on business continuity, staff safety & wellness, and risk communications.

The Emergency Preparedness & Response Section is also leading an effort to enhance and refine the working relationships, and emergency response and recovery capabilities among its whole-sale water customers. Among the goals of this effort are developing mutual aid processes, trainings and exercises, and providing a forum for coordination meetings and workshops.



# EMERGENCY PREPAREDNESS & RESPONSE

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## WILDFIRES AND WATERSHED MONITORING AND PROTECTION

Two major wildfires erupted within the Russian River watershed this year – the Walbridge and Glass fires – and Sonoma Water responded to ensure the safety of our community’s drinking water. Because of our experience with wildfires in recent years, Sonoma Water is familiar with addressing drinking water, surface water and environmental water quality concerns.

During the Walbridge Fire, Sonoma Water staff took immediate action to protect and maintain critical water and wastewater infrastructure located within the fire evacuation zones. In the aftermath of both the Glass and Walbridge fires, the agency promptly took steps to assess and monitor fire impacts on critical watersheds.

In conjunction with other local, county and state organizations, Sonoma Water launched a Watershed Task Force, similar to the ones formed after the Tubbs and Kincade fires in 2017 and 2019. The County Office of Resiliency and Recovery is leading the task force and Sonoma Water is an active member.

We also provide leadership within the County of Sonoma’s Watershed Emergency Response Team by sharing our technical expertise in the fields of water quality, hydrology, fisheries and utility management. Sonoma Water developed a soil and water sampling plan for the Russian River tributaries, Dry Creek and Lake Sonoma and will work to address concerns about the burn area and potential impacts on habitat for coho salmon and other salmonids.

Sonoma Water remains committed to ensuring the safety of our community’s drinking water. We continue to monitor the potential effects on the watershed from wildfires, and in collaboration with our partners we will prepare for future wildfires and explore ways to mitigate their effects.



## WATER SUPPLY UPDATE

### RAINFALL IN SANTA ROSA: OCTOBER 2019-2020

Average (1950-2019 water years): 30.88"  
Current Water Year: 19.23" which is 62.28% of average

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### RAINFALL IN UKIAH: OCTOBER 2019-2020

Average (1894-2019 water years): 36.82"  
Current Water Year: 14.75" which is 40.06% of average

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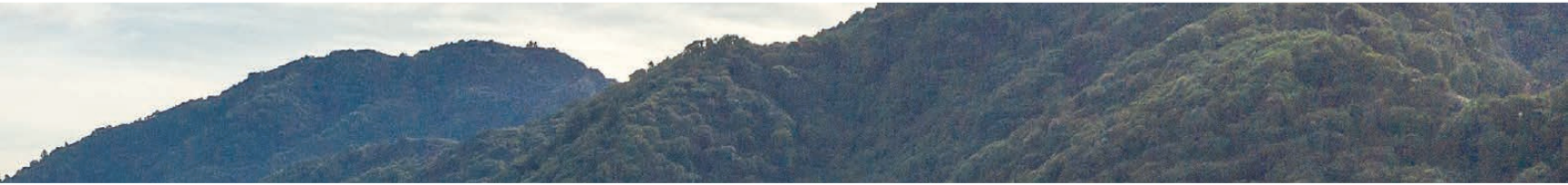
### LAKE SONOMA STORAGE: LEVELS ON 9/30/2020

Target Storage Curve: 245,000 acre-feet  
Current Storage: 180,646 acre-feet (73.73% of Water Supply Pool)

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### LAKE MENDOCINO STORAGE: LEVELS ON 9/30/2020

Target Storage Curve: 64,342 acre-feet  
Current Storage: 40,023 acre-feet (62.2% of Target)



## FORECAST INFORMED RESERVOIR OPERATIONS – 2020

In its sixth year, the Lake Mendocino Forecast Informed Reservoir Operations (FIRO) program continued to make great strides in 2020 to demonstrate the viability of this innovative strategy to more effectively operate reservoirs using modern technology and forecasting skill. This program is a nationally recognized demonstration project involving several state and federal agencies in collaboration with Sonoma Water to assess the viability of FIRO at Lake Mendocino. The program is co-led by Jay Jasperse (Sonoma Water) and Dr. Marty Ralph (Scripps Center for Western Weather and Water Extremes) with a steering committee that includes the U.S. Corps of Engineers (USACE), National Oceanographic and Atmospheric Administration (National Weather Service, Office of Atmospheric Research, and National Marine Fisheries Service), Bureau of Reclamation, and California Department of Water Resources.

During Water Years 2019 and 2020, the USACE granted the FIRO Steering Committee a Major Deviation to the Lake Mendocino reservoir rule curve that allows FIRO to be implemented on an annual basis. This experience has been extremely valuable to test the application of FIRO. Water Year (WY) 2019 was a very wet year and FIRO successfully demonstrated the ability to predict and support the management of reservoir operations during several strong storm events. Conversely, WY 2020 was the third driest year of record (127 years). Despite these dry conditions, by utilizing FIRO, water supply storage of Lake Mendocino was 18-percent above storage that would have occurred without FIRO. Currently, the FIRO Steering Committee is completing the Final Viability Assessment for the project. This comprehensive report will document the findings FIRO provides significant benefits for Lake Mendocino in terms of flood risk management, water supply, and downstream environmental flow conditions. In addition, the Steering Committee is requesting that the USACE approve a 5-year Major Deviation that will allow FIRO operations to continue while Sonoma Water works with USACE starting in 2021 to update the Water Control Manual to include FIRO on a permanent basis.

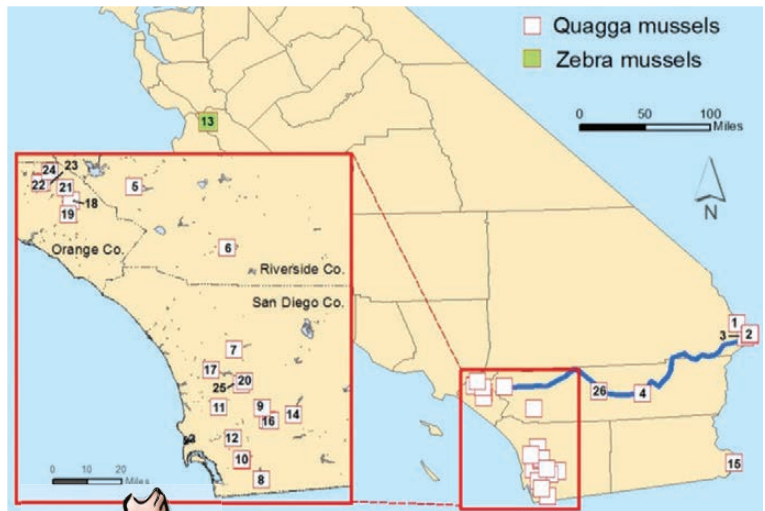
Based on the success of this program, there is nationwide interest to transfer the insights and tools developed by the Lake Mendocino Demonstration FIRO program to other reservoirs across the country. For example, the viability of FIRO is being evaluated at the following reservoirs: Prado Dam (Orange County), Oroville Dam and New Bullards Bar Reservoir (Yuba/Feather Rivers), and Howard Hansen Dam (Washington). Sonoma Water staff is providing technical services (under contract) to support the programs for the Prado, Oroville, and New Bullards Bar projects. One noteworthy area where Sonoma Water has contributed to FIRO is through the development of an innovative computer model for FIRO operations. The model was developed by the Sonoma Water's Water Resources Planning Section under the leadership of Chris Delaney. This work has gained national attention and is being utilized by these new FIRO programs. Chris Delaney was the lead author (with John Mendoza, Jay Jasperse, and others) for a paper recently published by the prestigious American Geophysical Union Water Resources Research Journal.

## SONOMA WATER'S ROLE IN KEEPING INVASIVE MUSSELS OUT OF LAKE SONOMA AND LAKE MENDOCINO

Sonoma Water teamed up with the California Department of Fish and Wildlife during the past year to support the Quagga and Zebra mussel testing program at Lake Sonoma and Lake Mendocino. Testing the waters of the lake for signs of mussels is an integral part of mussel prevention and helps provide a better understanding of invasive species. Two types of testing are currently performed; surface surveys and plankton tows.

When boaters enter the Lake Sonoma recreation area they are greeted by inspectors and a team of Mussel Dogs. The Mussel Dogs sniff out invasive species, specifically Quagga and Zebra mussels. In 2019 the team inspected 6,847 boats, and in the year 2020, they inspected 12,244 boats. A record number of boaters were on the lake for the 4th of July when the Mussel Dogs inspected 336 boats in an eight-hour period, which broke the previous record of 190. On Thursday, July 2, 2020 invasive Quagga and Zebra mussels were detected on a pontoon boat during a visual mussel inspection at the Lake Sonoma Visitors Center. Thanks to their diligence, the watercraft was not permitted to launch.

Federal funding is being authorized to support invasive quagga and zebra mussel prevention efforts such as the mussel-sniffing dogs at Lake Sonoma and Lake Mendocino as part of the Water Resources Development Act (WRDA) of 2020. WRDA 2020 includes an annual authorization of \$30 million for the U.S. Army Corps of Engineers to assist financially in the ongoing water and boat inspection operation. Testing and boat inspections are part of Sonoma Water's Quagga and Zebra Mussel Prevention Program, which operates through a grant from the California Department of Boating and Waterways. Learn more about our mussel prevention and inspection program at [www.dontmoveamussel.com](http://www.dontmoveamussel.com).





# WATER SUPPLY

## GROUNDWATER

Sonoma County's three Groundwater Sustainability Agencies (GSAs) continue development of Groundwater Sustainability Plans (GSPs). The Petaluma Valley GSA, Santa Rosa Plain GSA and Sonoma Valley GSA met regularly throughout 2020 to discuss draft plan sections, with a focus on defining sustainability within each basin. State law requires that groundwater sustainability indicators be quantifiable and measurable, so that improvements can be assessed over time.

The GSAs received \$3 million (\$1 million per basin) in competitive grant funding from California Department of Water Resources (DWR) to support the development of the GSPs. This funding is in addition to earlier grants received by each GSA (\$1 million per basin). The new funding will be used to drill 12 deep monitoring wells (four in each basin) to help measure progress toward sustainability. Grant funding will also support an outreach program designed to educate and assess concerns of rural residents regarding their groundwater supply and quality.

To learn more about the GSAs and upcoming meetings, visit:

[www.petalumavalleygroundwater.org](http://www.petalumavalleygroundwater.org)

[www.santarosaplaingroundwater.org](http://www.santarosaplaingroundwater.org)

[www.sonomavalleygroundwater.org](http://www.sonomavalleygroundwater.org)



# WATER SUPPLY

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## WATER USE EFFICIENCY

Sonoma Water and the Sonoma-Marín Saving Water Partnership (Partnership), consisting of 11 water retailers and Sonoma Water, work together on water use efficiency programs to enhance water supply and resiliency, and to meet statewide water efficiency goals. As a result, regional per capita water use is at 107 gallons per day (as calculated using 2019 data), well below the state’s 20x2020 goal of 129 gallons per person per day and down 34% from its peak of more than 163 gallons per person per day in 1997.

In response to the pandemic, Sonoma Water and the Partnership are adapting programs to reduce or eliminate in-person contact with customers. The annual Eco-Friendly Garden tour held in May was moved online with videos and photo galleries in lieu of in-person events at this year’s 28 featured gardens in Sonoma and Marin counties. Tour participants can now take the tour any time through the internet. Sonoma Water and several Partners are also adapting their Water Smart Home Survey programs to reduce direct contact by providing self-assessment solutions.

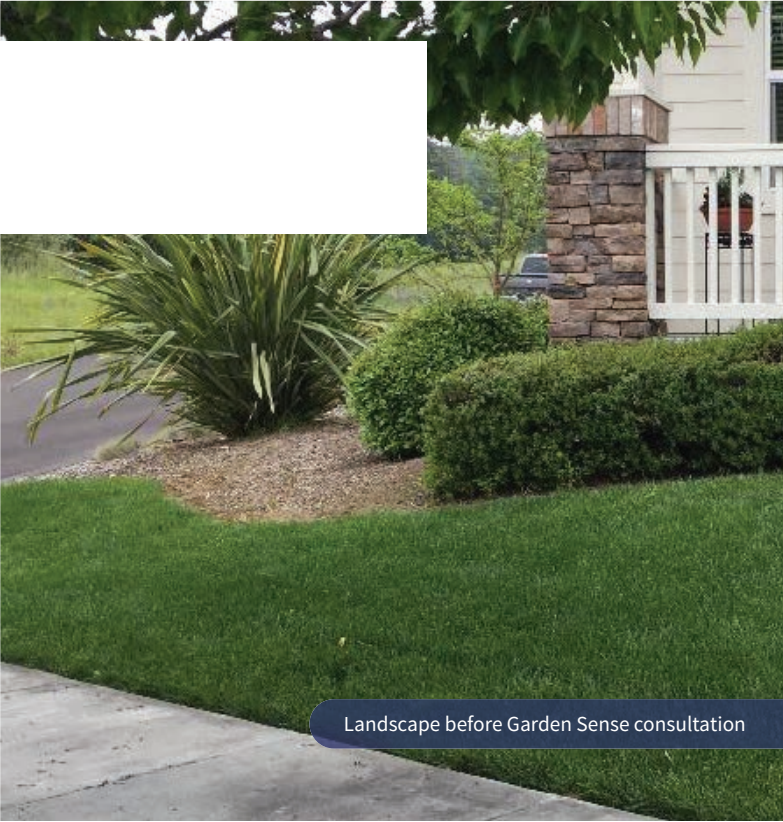
Sonoma Water manages several regional programs on behalf of the Partnership including the Qualified Water Efficient Landscape program (QWEL) which educates and certifies landscapers for efficient water management practices and the Garden Sense program, a collaboration with the University of California Master Gardeners of Sonoma County to provide landscape consultations to residents looking to reduce landscape water use.

For 2020, both of these programs received national recognition. QWEL received its fourth consecutive Sustained Excellence Award from the US Environmental Protection Agency’s Water Sense program. Garden Sense received the Irrigation Association’s 2020 Smart Water Application Technologies Outstanding Public Engagement Award.

To learn more about the Partnership and its programs, visit [www.savingwaterpartnership.org](http://www.savingwaterpartnership.org)



# WATER SUPPLY



Landscape before Garden Sense consultation



Landscape after Garden Sense consultation



# WASTEWATER TREATMENT

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From left: Assistant General Manager Mike Thompson, Director James Gore and his son Jacob, General Manager Grant Davis, and Larkfield Estates resident Gena Jacobs at the groundbreaking of the Larkfield Estates Sewer Project in January 2020.



## SERVICES

In 1995 Sonoma Water assumed responsibility from the County of Sonoma for managing the county sanitation zones and districts, which provide wastewater collection, treatment, recycled water distribution, and disposal services. County sanitation districts are separate legal entities operated under contract with Sonoma Water and sanitation zones are owned by Sonoma Water.

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## FACILITIES

Occidental, Russian River, Sonoma Valley, and South Park Sanitation Districts, Airport/Larkfield/Wikiup, Geyserville, Penngrove, and Sea Ranch Sanitation Zones.

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## POPULATION SERVED

Approximately 30,500 residences and businesses.

# WASTEWATER TREATMENT

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## **SONOMA VALLEY COUNTY SANITATION DISTRICT SEWER TRUNK MAIN REPLACEMENT PROJECT**

A multi-year project to replace Sonoma Valley's most important sewer line has been underway for the past two years.

The sewer trunk main was originally constructed in 1958 with a 21-inch diameter pipe for approximately 1.8 miles. When completed, this project will have replaced some of the oldest, most deteriorated pipeline with a new 27-inch diameter main.

The project is being constructed in three phases, beginning at the wastewater treatment plant on Eighth Street South outside Sonoma. In 2019, Reach 4-A was completed. This segment of the line runs between 6th Street West and Studley Street, and continues along Highway 12 ending in Ramon Street. The Reach 4-A project also included a short segment in Maxwell Farms Regional Park. Replacing the pipe in the Sonoma County Regional Park allowed for construction to take place as part of the park's master plan.

Construction of the third phase, Reach 4B-2, got under way in August of 2020. Reach 4B-2 begins right where 4B-A ended, at the intersection of Ramon Street and Highway 12 in Sonoma, crossing through Maxwell Farms Regional Park, and ending just north of Verano Avenue.

The sewer trunk main replacement is a requirement of a settlement agreement with the San Francisco Regional Water Quality Control Board aimed at improving water quality and minimizing impacts to the environment.

## **LARKFIELD ESTATES SEWER PROJECT**

Three years after the Tubbs Fire destroyed thousands of homes in Sonoma County, including Larkfield Estates, residents moving into their rebuilt homes have a new sewer system at their disposal.

As the rebuilding process began for Larkfield, residents approached Sonoma Water about the possibility of extending sewer service to the neighborhood, which had previously been served by septic systems.

Sonoma Water, which operates the Airport/Larkfield/Wikiup Sanitation Zone (ALWSZ), held a series of community meetings to gauge interest in the sewer project and to explore the feasibility of extending the existing sewer collection system into the impacted Larkfield Estates neighborhood. While some property owners were interested in staying with their existing septic systems, approximately half of the residents chose to participate in the sewer project. By 2019, the design and construction of the \$4.8-million Larkfield Estates Sewer Project was ready and breaking ground in January of 2020. The project included over 10,000 feet of new sewer main with laterals to all participating parcels. In 2020 construction was completed on all three phases and residents can connect once all permit and testing requirements are met and approved by the County.

# FLOOD PROTECTION & STREAM MAINTENANCE SERVICES

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## FLOOD CONTROL WORKS

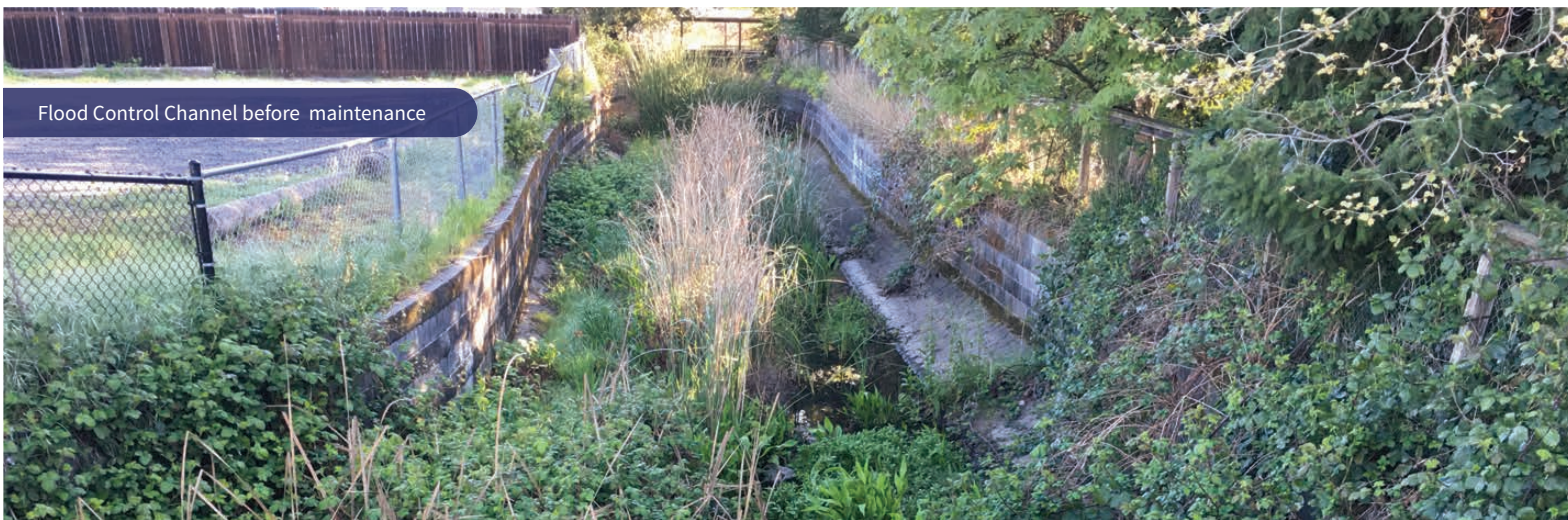
Coyote Valley Dam (Lake Mendocino), Warm Springs Dam (Lake Sonoma), Central Sonoma Watershed Project, and Laguna de Santa Rosa.

## CENTRAL SONOMA WATERSHED PROJECT FACILITIES

Santa Rosa Creek Reservoir (Spring Lake), Matanzas Creek Reservoir, Piner Creek Reservoir, Brush Creek Middle Fork Reservoir.

## STREAM MAINTENANCE

Sonoma Water maintains 75 miles of flood control channels and have easements for maintenance on 150 miles of creeks.



# BIOLOGICAL OPINION

## RUSSIAN RIVER ESTUARY MANAGEMENT PROJECT

This was the eleventh year of implementing the Estuary Management Program. The Russian River Estuary closed twice during the lagoon management season (May 15 - October 15) in 2020 as a result of formation of a barrier beach. To date, there have been three additional closures outside the management season. One closure, which occurred in January 2020, ended in an artificial breach with estuary water levels just above 10 feet.

Biological and water quality monitoring was conducted when the lagoon management season began on May 15. Pinniped (seals and sea lions) monitoring continued year-round. Staff are working on data analysis and preparation of reports for the prior year management season. The annual Estuary Management Project community meeting was not held in 2020 due to COVID-19. The 2020 Russian River Estuary Adaptive Management Plan was finalized in May 2020.



The Russian River at flood stage from the Monte Rio bridge



## CLIMATE ADAPTATION PLAN

Sonoma County has experienced more “natural” system impacts than most regions in the past decade. Climate variability and climate change will test the resiliency of Sonoma Water’s core functions in the short term and long term. Sonoma Water’s Climate Adaptation Plan is a leading effort to improve understanding of climate change, identify and assess climate related risks, and develop adaptation strategies to create more resilient systems. Our Climate Adaptation Plan guides Sonoma Water’s assessment of climate risks to water supply, sanitation, and flood control infrastructure and operations, and serves as a roadmap for developing, evaluating, and implementing adaptation strategies to improve the resilience of our core functions.

In 2020, Sonoma water staff and our consultants have been developing strategies for each of our core functions for improving the resilience of Sonoma Water’s infrastructure and operations and to assist in guiding future infrastructure investments and operational changes. Each of the climate adaptation strategies include anchor project concepts that cost effectively move the needle on climate adaptation within Sonoma Water’s control or control of our stakeholder partners. After gathering input from stakeholder meetings in late 2020 and early 2021, Sonoma Water expects to release our final Climate Adaptation Plan in early 2021.



# COMMUNITY

## WATER AND ENERGY EDUCATION PROGRAM

This year, our Water and Energy Education programs are rapidly adapting to support teachers through distance learning. Our educators are redesigning our current programs and creating new resources. We have developed synchronous and asynchronous lessons to meet student and teacher needs. Our goal is to continue to offer our traditional programs that inspire students to examine our local water and energy resources through an inquisitive, scientific lens.



## HIGHLIGHTS OF THE 2019-2020 SCHOOL YEAR



**8,030**

**students** received direct instruction through live and virtual classroom and field visits, including **3,201 third graders** and **2,094 fifth graders**. Curriculum materials were provided for **28,416 students**.



**72**

teachers served during teacher workshops and **139 teachers** raised steelhead in their classrooms.



**9,992**

**elementary aged students** reached through The Musical Watershed Assembly Program, including **3,645 students** who participated virtually.



**3,094**

**students** participated in the poster contest to produce Sonoma Water's popular water awareness calendar.

# GRANTS

## GRANT AWARDS FOR 2020

Sonoma Water leverages local funds with state and federal grants to help pay for projects. This year, Sonoma Water received more than \$20,018,258 million in state and federal grants, helping to keep its cost of service as low as possible.

WATER AGENCY PROJECT NAME	GRANTOR	GRANT PROGRAM	GRANT FUNDS	MATCH FUNDS
<b>FEDERAL GRANTS</b>				
Santa Rosa Creek Crossing Hazard Mitigation Project	FEMA	Hazard Mitigation Grant Program	\$2,979,959	\$3,228,289
Green Valley Creek Flood Resiliency and Restoration Project - Design	FEMA	Hazard Mitigation Grant Program	\$376,673	\$125,558
Advanced RADAR Flood Warning System – Phase 1	FEMA	Hazard Mitigation Grant Program	\$98,852	\$32,951
Russian River Pipeline Crossing – Cotati Intertie	FEMA	Pre-Disaster Mitigation Grant Program	\$2,948,879	\$3,273,728
Mark West Creek Pipeline Crossing	FEMA	Pre-Disaster Mitigation Grant Program	\$2,810,700	\$1,149,735
Sonoma Valley County Sanitation District LHMP Update	FEMA	Hazard Mitigation Grant Program	\$125,000	\$41,667
Russian River County Sanitation District Pipeline Crossing Vulnerability Assessment	FEMA	Hazard Mitigation Grant Program	\$125,000	\$41,667
Central Sonoma Watershed Planning Assessment	USDA/Natural Resources Conservation Service	Watershed Protection and Flood Protection Program	\$1,200,000	\$0
Innovative Conservation: Vital Streams and Forests*	USDA/Natural Resources Conservation Service	Regional Conservation Partnership Program	\$250,000	\$105,000
		<b>Total Federal</b>	<b>\$10,915,063</b>	<b>\$7,998,595</b>

\* Regional collaboration projects

# GRANTS

WATER AGENCY PROJECT NAME	GRANTOR	GRANT PROGRAM	GRANT FUNDS	MATCH FUNDS
<b>STATE GRANTS</b>				
Petaluma Valley Groundwater Sustainability Agency - Groundwater Sustainability Plan*	Dept. of Water Resources	Sustainable Groundwater Management Program	\$1,000,000	\$333,333
Sonoma Valley Groundwater Sustainability Agency - Groundwater Sustainability Plan*	Dept. of Water Resources	Sustainable Groundwater Management Program	\$1,000,000	\$333,333
Santa Rosa Plain Groundwater Sustainability Agency - Groundwater Sustainability Plan*	Dept. of Water Resources	Sustainable Groundwater Management Program	\$1,000,000	\$333,333
Santa Rosa Creek Fish Passage Improvements Planning Project	Wildlife Conservation Board	Wildlife Corridor and Fish Passage Program	\$274,000	\$193,504
Rainwater Catchment Rebate and Streamflow Enhancement Pilot Project*	Dept. of Water Resources	Integrated Regional Water Management Program	\$151,000	\$51,594
Bay Area Regional Water Conservation Program*	Dept. of Water Resources	Integrated Regional Water Management Program	\$621,179	\$621,179
North Bay Water Reuse Program - Phase 2*	Dept. of Water Resources	Integrated Regional Water Management Program	\$4,246,931	\$6,246,931
Russian River County Sanitation District Headworks, Lift Station, Force Main Planning Project	State Water Resources Control Board	Clean Water State Revolving Funds	\$810,085	\$0
		<b>Total State</b>	<b>\$9,103,195</b>	<b>\$8,113,207</b>
		<b>Grand Total</b>	<b>\$20,018,258</b>	<b>\$16,111,802</b>



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[www.sonomawater.org](http://www.sonomawater.org)