



Ready and Reliable

A REPORT TO OUR COMMUNITY | 2018 – 2019

EAST BAY MUNICIPAL UTILITY DISTRICT



Mokelumne River



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EBMUD at a Glance

1¢

*average cost per gallon
of water delivered*



90%

*of the water customers use comes
from the Mokelumne Watershed
in the Sierra Nevada Mountains*



50 million

*gallons of wastewater
treated daily*



4,200 miles

*of pipes maintained
throughout the system*



57,000 acres

*of watershed land
managed for the public*



150 million

*gallons of water
delivered daily*



History

In 1923, residents voted to form the East Bay Municipal Utility District (EBMUD), paving the way for the infrastructure that we rely on today to bring water from the Sierra Nevada to the East Bay. In 1951, wastewater treatment operations started. As we approach our 100th year, EBMUD remains a lifeline in the Bay Area, delivering high-quality water to more than 1.4 million customers. We also provide wastewater services to 685,000 customers, which helps protect public health and San Francisco Bay.

Mission

To manage the natural resources with which the District is entrusted; to provide reliable, high-quality water and wastewater services at fair and reasonable rates for the people of the East Bay; and to preserve and protect the environment for future generations.



A Reliable Reputation

EBMUD's reputation is built on nearly a century of providing customers with some of the highest-quality drinking water in the country. What might surprise you is the extent of our operations and the massive infrastructure required to provide reliable water and wastewater services.

From the Sierra Nevada foothills to Alameda and Contra Costa counties and along San Francisco Bay, EBMUD works year round, 24 hours a day, to deliver vital services to our communities.

We do this by carefully managing our water supply, protecting our watersheds, providing recreation, restoring fisheries, recycling water, generating green energy, continually testing water and wastewater at our lab and implementing programs that protect the Bay.

Every day, our employees advance our system's reliability. We embark on projects to ensure a high-quality water supply now and for the future. We prioritize and maintain infrastructure renewal. We research and respond to the impacts of climate change and plan for potentially devastating earthquakes, wildfires and drought.

"EBMUD works year round, 24 hours a day, to deliver vital services to our communities."

EBMUD's proud history shows a record of meeting a variety of challenges since we were created in 1923. Through rain or shine, our commitment is to stay ready and reliable to serve you. I have appreciated the opportunity to dedicate myself to EBMUD for the last 27 years. Please enjoy our report for 2018-2019.

A handwritten signature in black ink that reads "Alexander R. Coate". The signature is fluid and cursive, written in a professional style.

ALEXANDER R. COATE
General Manager

Upholding High Water Quality

Protecting public health one drop at a time

Great tap water delivered daily

The water flowing from your faucet in the East Bay originates from the Mokelumne Watershed in the Sierra Nevada foothills 90 miles away. This is where high water quality begins.

Before water reaches your tap, every drop is treated to the highest standards. EBMUD's water treatment plants filter, disinfect and treat water around the clock with a capacity to process up to 375 million gallons daily.

We continually invest rate dollars to advance water treatment. In the past two years, we replaced ozone systems to increase disinfection at Upper San Leandro and Sobrante water treatment plants. We are currently upgrading all of our water treatment plants to improve performance, increase reliability, and ensure safety for neighbors, staff and the environment.

From the Mokelumne Watershed to your tap, EBMUD inspects and tests water each step of the way. We test the water for more than 100 different compounds throughout the year, collecting samples from over 300 locations all over our service area. Our team is dedicated to providing the highest quality water to safeguard public health.



Take action

Curious about where your water comes from? Go online and take a video tour of the majestic Mokelumne Watershed, including Pardee Reservoir, at [ebmud.com/yourwater](https://www.ebmud.com/yourwater).





Pardee Reservoir



Major milestones

- In 2018, **your drinking water quality was better than or equal** to state and federal requirements. Read the annual water quality report at ebmud.com/waterquality.
- In 2018 and 2019, EBMUD started each year with **full water supply reservoirs**.
- EBMUD provided **comprehensive lead testing** of plumbing at many pre-kindergarten through 12th grade schools. All public schools in the service area were tested, and all sampling requests from private schools were completed.



20,000 tests

*of our drinking water
conducted annually*



Ensuring Environmental Protections

Safeguarding natural resources for future generations

Healthy river, healthy fish

EBMUD's partnership with state and federal natural resources agencies continues to yield success on the Mokelumne River. Chinook salmon migrated to the Mokelumne River in record numbers over the last two years. After record-breaking returns of nearly 20,000 salmon in 2017 – the highest recorded on the river since 1940 – the 2018 returns were the third highest, continuing a streak of healthy returns since 2011.

While the Mokelumne River accounts for less than 3 percent of the outflows to the Delta, Mokelumne salmon accounted for about 33 percent of the recreational catch and 43 percent of the commercial catch off the California coast.

The strategies implemented by EBMUD and partners include improved habitats, updated hatchery practices, innovative scientific studies and coordinated Delta operations.

Our watershed is also a safe haven for endangered species. We create healthy habitats for the California red-legged frog, Alameda whipsnake, California tiger salamander and steelhead trout.

A thriving ecosystem for plants, animals and aquatic life is integral to achieving a high-quality water supply and serves as a testament to our environmental commitment.

Take action

Visit the Mokelumne River Hatchery in Clements, California and meet these famous fish or take a hike along watershed trails. Learn more at [ebmud.com/salmon](https://www.ebmud.com/salmon).



The wonders of wastewater



What happens after the flush? EBMUD disinfects dirty water at the Main Wastewater Treatment Plant at the foot of the Bay Bridge. At this facility, more than 50 million gallons of wastewater are treated daily, with peak storm flows of over 300 million gallons per day. We carefully treat and test wastewater before it is safely released into San Francisco Bay and made safe for aquatic life. We also find ways to recycle water in the community and reuse waste. Some waste is used as fertilizer, other waste becomes power. Who knew pee and poo could be so powerful in protecting the planet?



Major milestones

- **The East Bay Watershed Master Plan**, the blueprint for managing District lands and reservoirs, was updated to address climate change, invasive mussels and toxic algae. Bicycle access was granted along portions of the Pinole Valley and Eagle's Nest trails.
- California **added 37 miles of the river** upstream of Pardee Reservoir **to the California Wild and Scenic Rivers System**, protecting the environment, communities and water supply.
- EBMUD **worked with regulators to advance the science of nutrient management** in San Francisco Bay. A permit was adopted to continue nutrient monitoring.
- EBMUD recycles the nutrients in biosolids through land application. EBMUD **increased biosolid reuse** by sending 66 percent to land application and 11 percent to compost for use as a soil amendment.
- Our laboratory **advanced microplastics research** by developing a widely recognized analytical method to study micro-sized plastic debris.

Managing our Infrastructure

Maintaining critical infrastructure to ensure reliable, high-quality service

Next generation pipelines

In the East Bay, 4,200 miles of pipelines, under bustling neighborhoods and busy streets, deliver high-quality water to customers. EBMUD is proactively replacing pipelines in many neighborhoods to improve water service, reduce water loss and lower the number of pipeline breaks.

EBMUD's pipeline replacement program focuses on pipes nearing the end of their lifespans. Since the cost to replace a pipeline is greater than the cost to repair, we carefully select which pipelines to replace. We also study pipelines at research institutions to investigate earthquake-resilient materials.

In the Hayward Fault zone in the Berkeley Hills, EBMUD crews installed 3,000 feet of ductile iron pipe capable of moving with the ground to prevent breaking during earthquakes.

We keep a close watch on existing pipelines too. Through the use of satellite data from space and acoustic devices, we surveyed more than 1,300 miles of distribution pipelines in 2019 to investigate leaks before they surfaced. When main breaks occur, we respond 24 hours a day to repair leaking pipes and restore water service. In the past two years, we repaired more than 1,800 leaks.

These are among the many construction and maintenance actions underway to keep critical infrastructure running smoothly.

Pipeline replacements

FY2018

16 miles

completed

FY2019

17.4 miles

completed

FY2020

17.5 miles

target

Take action

What work is happening near you? Visit our interactive map at ebmud.com/construction.



Critical Improvements Completed

FY2021

20 miles
target



Water Treatment Plants

Facilities improved: 3 | Investment: \$63.1 million



Neighborhood Reservoirs

Facilities improved: 13 | Investment: \$55.4 million



Pumping Plants

Facilities improved: 9 | Investment: \$29.3 million



Dam and Outlet Towers

Structures upgraded: 2 | Investment: \$23 million



Aqueducts and Large Diameter Pipelines

Length upgraded: 33,884 linear ft. | Investment: \$19.4 million



Wastewater Interceptors

Length upgraded: 7,700 linear ft. | Investment: \$26 million



Main Wastewater Treatment Plant

Systems improved: 4 | Investment: \$31 million

Focusing on Resilience and Sustainability

Adapting to widespread changes and reducing our environmental footprint

Preparing for water without power

During the 2019 wildfire season, Pacific Gas & Electric turned off electricity in the Bay Area during periods of extreme fire danger. EBMUD rose to the challenge.

During the power shutoffs, hundreds of EBMUD facilities, including water treatment plants, pumping plants and local water storage tanks, were affected by the outages.

With backup generators and pumps staged at facilities earlier in the year, our water and wastewater systems delivered continuous service during the power shutoffs. This kind of planning and preparation served our customers well.

Major milestones

- EBMUD **collaborated with the U.S. Geological Survey** on a report entitled “HayWired” describing the potential impacts of a 7.0 magnitude earthquake along the Hayward Fault. Read the report at ebmud.com/haywired.
- EBMUD **adopted a climate change policy** recognizing the impacts associated with changes in the Earth’s climate and confirming our commitment to diversifying water supplies as well as supporting research, planning and other steps to counter and adapt to climate change.
- EBMUD **completed a Recycled Water Master Plan Update** in 2019.
- Despite population growth of 8 percent since 2007, **overall water use in EBMUD’s service area has declined by about 24 percent**. Customer reductions in water use helped to protect long-term water supplies.



Take action

Are you prepared? Store at least two gallons of water per person per day for seven days minimum. Don’t forget your pets.

Learn more at ebmud.com/storewater.



Shining a light on renewable energy

Did you know EBMUD generates renewable energy at many of our facilities? Over the past two years, EBMUD generated over 487,500 megawatt-hours of energy from renewable sources including solar, biogas and hydropower. That is enough capacity to power 45,000 average-sized American homes. About 30 percent of EBMUD's energy use was served by our renewable projects. We are committed to sustainability, and protecting the environment and our planet.

- In 2019, EBMUD completed the tenth photovoltaic project on District lands. Located near Camanche Dam, new solar panels power the Mokelumne Fish Hatchery, an oxygenation system at the dam and water treatment facilities for recreation areas. A solar project, expected to deliver up to five megawatts in Orinda, is also in development.
- The Main Wastewater Treatment Plant is an industry leader, producing renewable energy through the capture of biogas and conversion to energy. After meeting the plant's power demands, EBMUD sells the excess power to a neighboring public agency.
- In the Sierra Nevada Mountains, EBMUD operates two reservoirs on the Mokelumne River as an integrated system to provide water supply while meeting numerous needs downstream. Each site has a hydroelectric plant that generates clean hydropower.



Serving our Customers and Communities

Building stakeholder trust through excellent service, communication and education

Learning with a splash

EBMUD is connecting with future customers early on. The water and wastewater cycles are full of science, chemistry, biology and engineering and we're proud to engage students through classroom curriculum and exciting excursions. Our rangers lead creek restoration projects on EBMUD's watershed lands. On tours at the Main Wastewater Treatment Plant, students discover what happens after dirty water goes down the drain and how to keep the Bay clean. Inside classrooms, EBMUD's experts share conservation lessons and how to care for drought-tolerant gardens. The goal is to nurture a community of young citizens who will protect our land, water and environment.



264,000

calls fielded by 46 customer service representatives



106,740

customers paid bills electronically via eBill, making payments easier



7,000

enrollees in the Customer Assistance Program



7,700

water-saving devices and 1,530 conservation rebates provided



WOW on the weekends

Engaging with our community also happens on the weekends, where families and festivals come together. EBMUD's "Water on Wheels" (WOW) trailer hit the festival circuit, hydrating thousands of kids and grown-ups for free at more than 30 events over the past two years. If you see the WOW trailer, take a sip and spin our trivia wheel. You might just learn where your water comes from (the Mokelumne River, of course).



Take action



If you have questions about your bill, water use, construction projects or other issues, we're here for you. Call EBMUD at 1-866-403-2683, email us at customerservice@ebmud.com or visit ebmud.com.



Developing our Workforce

Creating an environment that attracts, retains and engages a high-performing workforce

Ready for demanding downpours

Rain or shine, EBMUD's Main Wastewater Treatment Plant collects and treats wastewater from the East Bay so it's safe to release to San Francisco Bay. During dry months, EBMUD handles over 50 million gallons of wastewater a day, but during major storms, the surge of wastewater at the plant and wet weather facilities can increase tenfold, to 500 million gallons per day.

To prepare operators, we enhanced staff training by offering a hands-on approach. New operators practice storm operations by filling up basins at EBMUD's three wet weather facilities, testing equipment and reviewing protocols alongside seasoned staff. New assessments, updated training manuals and job shadowing ensure that new operators have the skills to handle the downpours.

EBMUD's dedication to workforce training protects public health and keeps untreated water from reaching the Bay.



2,000 employees, what we do for you:



63% *Water Service*



14% *Wastewater Service*



14% *Support Services*



6% *Customer Service*



3% *Natural Resources*

Take action

Do you like to design, build, repair things or conduct experiments? Do you enjoy protecting the environment and exploring the great outdoors? EBMUD might have a job for you. Learn more about the variety of roles available at ebmud.com/jobs.



Major milestones

- EBMUD hired **370 new employees** in the past two years.
- Employees received **67,970 hours of training** in 2019.
- **A diversity committee was formed** to promote a diverse candidate pipeline, an inclusive workplace and development opportunities.



Managing our Finances

Strengthening financial resources through careful planning and sound rates

A budget built on reliability

EBMUD is investing in the complex infrastructure that brings you high-quality tap water and protects San Francisco Bay with outstanding wastewater treatment.

Our budget aims to maintain and upgrade pipelines, treatment plants, tanks, reservoirs and wastewater facilities that serve you.

As a public, not-for-profit agency, we work hard to make smart decisions about how your dollars are invested, and we have found ways to offset rates through revenue-generating sales from hydropower and biogas energy. Whether we deliver one gallon of water or 150 million gallons, the infrastructure that delivers this resource and treats our waste must be maintained.

For customers, this means we provide water for about \$2 a day to the average household, or about a penny a gallon. For customers who also receive EBMUD wastewater treatment service, the cost is about \$1 per day for the average household. EBMUD remains committed to providing the highest level of water and wastewater services while keeping rates fair and reasonable as we undertake the vital work needed to rebuild our systems.

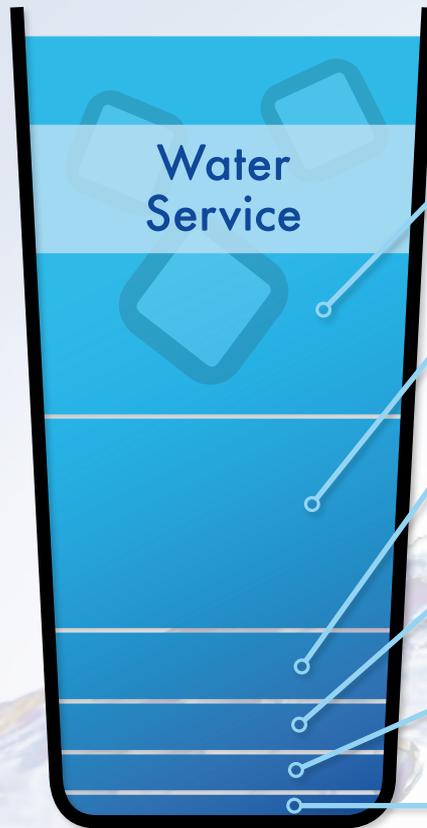


Take action

Need help paying your bill? EBMUD offers a Customer Assistance Program (CAP) to help pay a portion of water bills for low-income residential customers. Learn more at [ebmud.com/cap](https://www.ebmud.com/cap).



Where does each rate dollar go?



Water Service

51¢ Infrastructure Improvements
Pipelines, reservoirs, treatment plants, pumping plants

32¢ Water Service
Water service, water storage, treatment, delivery, system maintenance

8¢ Administration
Internal support services

4¢ Customer Service
Call center, education, water conservation, billing, collection

3¢ Natural Resource Management
Public recreation, watershed management, fisheries program

2¢ Regulatory Compliance
Meet or exceed all drinking water standards



Wastewater Service

44¢ Infrastructure Improvements
Wastewater treatment plant facilities and sewer interceptors

2¢ Customer Service
Call center, education, billing, collection

7¢ Administration
Internal support services

12¢ Environmental/Regulatory Compliance
Pollution prevention, water quality lab, inflow/infiltration control

35¢ Wastewater Treatment
Operations and maintenance of main treatment plant and wet weather facilities



Major milestones

- EBMUD achieved Standard & Poor's highest credit rating of AAA for a water agency, which means customer savings from lower borrowing costs.
- A \$2.3 billion budget was adopted for FY 2020-2021, of which two-thirds is dedicated to infrastructure.

From Snowflake to Bay

Water System

- **1.4 million** customers served
- **2** Sierra Foothills reservoirs (Pardee and Camanche)
- Freeport Regional Water Project (Sacramento River – dry year supplemental supply)
- **5** East Bay reservoirs (Briones, San Pablo, Upper San Leandro, Chabot, Lafayette)
- **6** water treatment plants in the East Bay
- **4,200** miles of distribution pipelines
- **122** pressure zones covering elevations from sea level to 1,523 feet
- **164** neighborhood water storage tanks
- **135** pumping plants that convey water to neighborhood water storage tanks
- **100** pressure regulators/rate control stations

Wastewater System

- **685,000** customers served
- Main Wastewater Treatment Plant processes over **50 million** gallons per day (MGD) during dry weather; over **300** MGD during storms; and manages system-wide flows of over **500** MGD during the largest rainfall events
- **29** miles of sewer interceptors (large-diameter pipes that convey waste to the Main Wastewater Treatment Plant)
- **15** pumping plants
- **3** wet weather facilities



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