

# Sustainability at EBMUD

## Fiscal Year 2018 (FY18)

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### District 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.

### Sustainability (*Policy 7.05 – Sustainability and Resilience*)

Provide reliable, high-quality drinking water and wastewater service through sustainable operations, maintenance, planning, design, and construction activities that avoid, minimize or mitigate adverse effects to the economy, environment, employees, and the public.

EBMUD continuously assesses its operations and policies to ensure that feasible and practical steps are taken to improve financial, social and environmental sustainability (the triple bottom line), with continuous attention to potential areas of improvement.

In FY18 EBMUD continued its commitment to providing safe, clean, and affordable water supplies, as well as protecting the San Francisco Bay, to support the six goals of the District's Strategic Plan:

- Long-Term Water Supply
- Water Quality & Environmental Protection
- Long-Term Infrastructure Investment
- Long-Term Financial Stability
- Customer & Community Services
- Workforce Planning & Development



# Long-Term Water Supply

## Water Conservation: A Way of Life

Even though the multi-year drought is behind us, EBMUD's customers sustained approximately 12 percent of overall demand reduction in comparison to the 2013 pre-drought base year. In FY18, EBMUD's popular Home Water Report (HWR) program expanded to more than 108,000 single-family and multi-family households, including Customer Assistance Program participants. During this time, more than 6,600 customers were notified of higher than average water use and potential leaks through the HWR portal.



The Landscape Rebate Program remained the most popular of EBMUD's rebate programs, yielding more than 330,000 square feet of lawn conversions and installations of drip irrigation. In addition, the District's Section 31 Water Efficiency Requirements resulted in approximately 7,000 residential and

non-residential water efficiency plan reviews, which will yield durable savings to help offset increased demand from accelerated in-fill development.

**Coming up:** Building on the success of the HWR, EBMUD will pilot a Business Water Report program in FY19 to bring the same benefits to select commercial customers. This pilot will solicit feedback on the design and usefulness of the report prior to making the program available to all commercial customers.

EBMUD's water efficiency and conservation program achieves ongoing water use reductions that reduce electrical demand for water treatment and distribution, chemical use for water treatment plants, and solid waste generation at water treatment plants. These efforts also result in more water being available for fishery and habitat purposes on the Mokelumne River.

EBMUD worked closely with the state legislature and administration to pass legislation to implement the administration's "Making Water Conservation a California Way of Life" framework. The final legislation provides a statewide framework for water supply and drought planning that protects

water rights and preserves the authority of local agencies to plan and manage to local conditions. This legislation provides an appropriate level of state and legislative oversight to help water agencies throughout the state achieve a more uniform approach to water use efficiency.

## Water Recycling Reaches Further

In summer 2018, EBMUD and its partners, Dublin-San Ramon Services District and City of Pleasanton, completed a major expansion of the Jeffrey G. Hansen Water Recycling Plant in Pleasanton. The \$18.8 million expansion will increase recycled water production from 9.7 million gallons a day to 16.2 million gallons a day, and allow the plant to keep up with the growing demand for recycled water in the region.

## DREAM On

EBMUD continues to make progress on its pilot groundwater banking project in San Joaquin County. Through the Demonstration Recharge, Extraction, and Aquifer Management (DREAM) Project, EBMUD will provide up to 1,000 acre-feet of Mokelumne River water to San Joaquin farmers who will use it for irrigation in place of groundwater. In exchange, EBMUD can extract up to 500 acre-feet of groundwater and pump it to the Mokelumne Aqueducts for use by EBMUD customers in dry years. In FY18, EBMUD began detailed design of project facilities necessary to inject groundwater into the Aqueducts. EBMUD made its first delivery of Mokelumne River water in July 2018, allowing for a test of the delivery system. If the DREAM Project is successful, EBMUD and its partners in San Joaquin County could expand the pilot to a larger project to help ensure long term water supply reliability and manage the groundwater basin.

## Plugging Those Leaks

In FY18, EBMUD used new technologies representing satellite and acoustic leak detection methods in the water distribution system to expand its search for leaks that have not reached the surface. A comprehensive evaluation of satellite leak detection was performed and 35 leaks were identified on distribution pipelines and service laterals. Acoustic leak detection

was highly effective, using a network of over 1,400 automated acoustic leak detection devices to identify leaks for repair on a planned basis resulting in over \$4.1 million of avoided costs. In addition, EBMUD hosted a leak detection workshop with water loss experts from Denmark on March 13, 2018. Danish leak detection experts confirmed that EBMUD's equipment and procedures related to manual acoustic leak detection comply with the industry's best practices.



## Driving Greenhouse Gases Down

EBMUD is committed to reducing its greenhouse gases (GHGs) from electricity use to zero by 2040 and from fuel combustion by 50 percent by 2040 against a year 2000 baseline. EBMUD continued on a trajectory to meet its goal last year with total GHG emissions in 2017 of 20,884 metric tons (MT), a 54 percent reduction from the baseline GHG emissions of 45,479 MT in 2000. This was the lowest recorded annual total since EBMUD began its GHG emissions assessments in 2005.

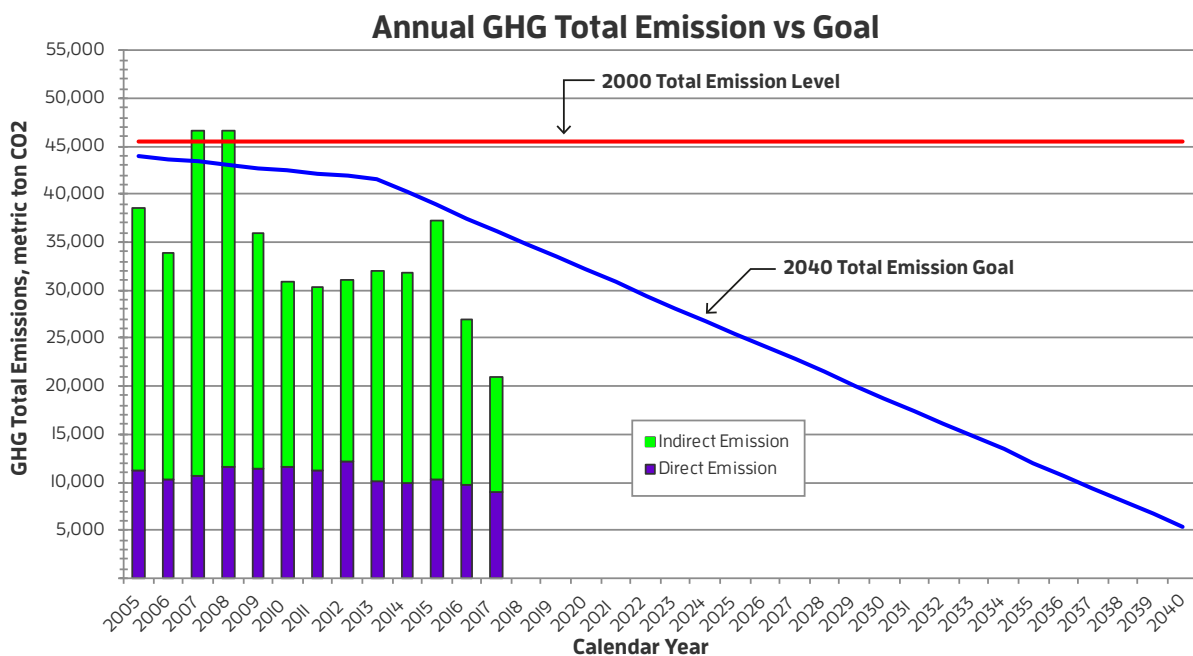
To keep reducing its carbon footprint, EBMUD initiated its "Carpool Connection" to help employees who may want to carpool. This self-managed system added two carpools for four employees and has 14 more people signed up waiting for a match. Taking more cars off the road reduces

GHG emissions and provides an immediate local benefit of reducing street congestion.

In addition, the Main Wastewater Treatment Plant continues to generate 130 percent of its power needs from biogas, selling the surplus to provide clean, renewable energy to the Port of Oakland.

**Coming up:** EBMUD is investigating three potential sites on its East Bay watershed property to develop one or more 5 megawatt photovoltaic projects under PG&E's Renewable Energy Self-Generation Bill Credit Transfer tariff. The three sites are the Duffel property within the City of Orinda (off Bear Creek Road), the Shuteman property north of Lafayette in unincorporated Contra Costa County, and the Navy Flat property adjacent to the Castro Valley Christmas Tree Farm in unincorporated Alameda County.

## Water Quality & Environmental Protection



## Protecting the Bay in All Ways

EBMUD continues to be a leader in protecting the San Francisco Bay, maintaining a perfect compliance record for its discharge permit for the Main Wastewater Treatment Plant (MWWTP) since 2000. In addition, it has engaged in:

- **Nutrient management:** EBMUD is working with regulators and other agencies on ways to keep the Bay clear by controlling the flow of nutrients that can lead to excess algae growth;
- **Microplastics:** EBMUD is an industry leader in finding ways to reduce tiny pieces of plastic, called microplastics, in the Bay. A key element of this work advanced this year when EBMUD developed a new lab method to measure microplastic concentration; and
- **Private sewer laterals:** EBMUD has a long-term program to reduce stormwater intrusion into its wastewater system, to ensure that even during heavy winter storms all wastewater receives the highest levels of treatment. An important component of this work is inspecting private sewer laterals for leaks. Since the program began, 29,290 service laterals have been replaced, equating to more than 395 miles of PSLs certified.

## Mokelumne Salmon: It's a Record

The fall run Chinook salmon return numbers to the Mokelumne River in 2017 were the highest recorded since 1940 with nearly 20,000 fish coming home. Considering that many of these fish were born and outmigrated during one of the worst droughts in history, the numbers returning were phenomenal. EBMUD biologists, working with regulatory agency staff, have implemented numerous management practices related to flow management, juvenile release practices, Delta cross channel gate closures, and many others. This has made the Mokelumne River salmon population a standout as one of the few meeting its population doubling goal as required by the Central Valley Project Improvement Act. In 2017, Mokelumne River salmon made up approximately 35 percent of the ocean recreational catch and 20 percent of the commercial harvest, all from a river

that contributes just 2 percent of the Delta inflow. In an ever-changing regulatory and atmospheric climate it will be critical for EBMUD staff to work on continued action to maintain the salmon successes in the river.

In addition, EBMUD staff conducted fish rescues and provided permitting and monitoring support for the I-80 Fish Passage Project, and for a new bridge project at Alhambra Valley Road on the EBMUD Pinole watershed. As a result of these projects, steelhead were able to migrate upstream from the ocean to spawn on the EBMUD watershed for the past two years. Prior to these projects, steelhead spawning had been documented only once in Pinole Creek in the past 15 years.

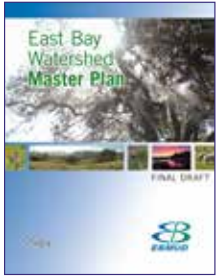
## The Mokelumne River: Officially Wild and Scenic



EBMUD worked in partnership with stakeholders from the Mokelumne watershed and environmental community to advance legislation to include five segments comprising approximately 37 miles of the Mokelumne River in California's wild and scenic rivers system along with five special provisions that address local concerns. This legislative push was the culmination of a multi-year effort to reach consensus among stakeholders to protect the river. The protections will preserve the free-flowing condition and natural character of these segments while maintaining local land and water uses in a manner that allows for potential development of future water rights and projects that do not adversely affect the extraordinary scenic and recreational values for which the river segments are designated. The Mokelumne River was officially added to the state's wild and scenic rivers system on June 27, 2018.



## East Bay Watershed Master Plan Refreshed



In May 2018, the EBMUD Board approved the update and CEQA environmental documents for the East Bay Watershed Master Plan (EBWMP). This

culminated a three-year engagement with the community to maintain the health of the watershed while responding to the need for new recreational access. The EBWMP incorporated two decades of land management experience, identified emerging challenges such as climate change and strategies to address them, and worked with stakeholders to open 7.5 miles in the watershed trail system to bicycle use. In addition, EBMUD

committed to further reducing the already limited use of herbicides to control invasive vegetation.

### Greener, Better Buildings

EBMUD is continuing its commitment to environmental stewardship by achieving and maintaining Green Business and WaterSmart Business Certifications for District facilities. Currently five facilities are county certified as Green Businesses and eighteen facilities are certified as Water Smart Businesses.

In addition, EBMUD partners with Alameda and Contra Costa County Green Business programs to help our commercial customers become more sustainable and reduce their water use. In the last two years the District has audited over one hundred businesses, resulting in over sixty Green Business certifications and over thirty WaterSmart Business certifications.



### Dam Safety and Sustainability

EBMUD relies on dams for its water supply and power generation. To ensure the safety and sustainability of these important infrastructure assets, EBMUD has an active dam safety program, which includes monitoring of dams using instruments, monthly visual inspections, periodic dam safety reviews, and ongoing maintenance and capital improvements. In FY18, EBMUD completed a seismic \$12M seismic retrofit of Chabot Dam and tower, a \$6.5M seismic retrofit of Upper San Leandro tower, and various instrumentation upgrades.

EBMUD completed a comprehensive safety assessment of Camanche and Pardee Dams, which is performed every five years as part of its FERC license.

EBMUD also performed a detailed review of all of its spillways. Interim repairs were performed and further studies are planned. EBMUD updated its Emergency Action Plans for all of its water supply and treated water storage dams and conducted emergency response exercises. Efforts are underway to update dam inundation maps for emergency response.

### Walnut Creek Water Treatment Plant Upgrades for Resilience

Pretreatment upgrades for the WCWTP are currently in the predesign phase and include ozone for taste and odor control, ballasted sedimentation to remove sediment, algae, and pathogens, and improved solids handling processes to treat residuals. These additional processes will provide greater benefits including improved reliability in the event of watershed fires, high-intensity storms, or droughts and increased capabilities of the plant to treat water supplies from different sources. The project also improves regional reliability through interties with other agencies located in the WCWTP service area. Treating a portion of the Freeport supplemental supply at WCWTP would reduce annual drought operations costs by as much as \$1.1 million and lower

## Long-Term Infrastructure Investment

greenhouse gas emissions by up to 1,500 metric tons of carbon dioxide per year due to reduced pumping.

### Protecting the Aqueducts

In FY18, 8.1 miles of levees were improved for added protection of the Mokelumne Aqueducts across the Delta. For many years, EBMUD has partnered with the local Reclamation Districts (RDs) to bring the levees up to Army Corps of Engineers standards. Work completed on Lower Roberts Island (RD 684) and Palm and Orwood Tracts (RD 2024) was partially funded by annual assessments by EBMUD. Work completed on Upper Jones Tract (RD 2039) was part of a larger project primarily funded by a \$35 million Department of Water Resources grant obtained in 2011 by EBMUD and the RDs. In 2017, EBMUD secured another \$16M grant to make further improvements on additional levees in conjunction with the RDs. Work from this grant is scheduled to start in late 2018, which will augment the major investments EBMUD has made to upgrade the levee system.

### Pipeline Rebuild Moves Forward

The Pipeline Rebuild program represents a new way of doing business, using a cross-divisional staffing approach to enhance collaboration and teamwork between maintenance, planning, design, and construction staff. In FY18, EBMUD



replaced over 15 miles of pipe. The program piloted new pipeline materials each with an anticipated life of over 100 years. Based on a cured-in-place pipe (CIPP) pilot program in FY18, the team finalized recommendations for future use of CIPP for pipeline renewal, which in many situations can reduce the social and environmental impacts of pipeline renewal. The team also streamlined the pipeline design process, and improved the workflow for completing final records. They will continue to evaluate costs and productivity metrics for all pipeline jobs from start to finish, as well as community impacts such as duration of neighborhood presence.

### Administration Building Makeover

In FY18, staff completed the design for upgrading the Administration Building's (AB) lighting and heating, ventilation, and air conditioning systems. The project will upgrade all of the AB lighting fixtures with LED lights and new lighting controls including occupancy sensors in private offices, break/print rooms, and conference rooms. The project will also include new more efficient chillers, boilers, cooling tower, and pumps, data center electrical infrastructure upgrades, and the removal of a cogeneration plant that is not as clean as line power. In total, the project will reduce the overall energy consumption of the AB by over 40 percent while improving the reliability of the building. At the conclusion of the upgrades, the AB is expected to qualify as an EPA "Energy Star" rated building.

## Long-Term Financial Stability

EBMUD continued to make progress last year, surpassing its goals to achieve 2x debt service coverage and less than 50 percent debt funding of capital. Reaching these goals and moving further towards more cash funding of capital allows for lower rate increases for ratepayers in the long run, and prepares EBMUD to be able to react to a financial emergency such as a large seismic event.



# Workforce Planning & Development

## Healthier Employees

After the 2017 Inaugural Wellbeing Month, EBMUD established a Wellbeing Steering Committee and a group of Wellbeing Champions who developed and coordinated the January 2018 Wellbeing Month around the themes of "Nourish, Move, and Relax." Together the team created and executed a comprehensive wellness program including:

- Created a roadshow program to educate employees about diabetes and diabetes prevention.
- Developed brown bag lunch and learn topics: Mindfulness at Work, Healthy Sleep Habits, and Your Spending, Your Savings, Your Future.
- Provided fruit at key District locations during the month.
- Hosted workouts at multiple District locations.
- Built an "Inspired by TED" event where eight employees from across the District shared their stories of wellbeing in 6-minute presentations. Employees may view these presentations at <http://media/wellbeing>.

## Investing in the Future Workforce

EBMUD hosted 3 interns for a 14-week Instrument Internship Program. Additionally, EBMUD filled 42 internship positions throughout all of its departments for the 2018 Summer Youth Program/HS Internship Program. High school summer internships provide hands-on knowledge of water careers that are available to students in EBMUD's service area.

On September 11, 2018, the Board of Directors approved a new Technical Trades Apprenticeship Program (TTAP). TTAP is a joint partnership between EBMUD and the Advanced Manufacturing and Transportation Apprenticeships of California (AMTAC). The program will augment EBMUD's existing Maintenance Trades Training Program (MTTP) and is consistent with the rules and regulations of the State of California's Division of Apprenticeship Standards and the United States Department of Labor's Office of Apprenticeship.

The TTAP pilot will begin January 2019 and will focus on the Maintenance Machinist and Plant Maintenance Mechanic classifications since these classifications are the most difficult to fill. Three Limited Term (LT) Technical Trades Apprentices will be part of the pilot, and if successful, staff anticipates expanding the program to include the Electrician and Instrument Technician classifications. The program will last between 18 to 24 months, and apprentices will receive a certificate of completion at the end of the program.

EBMUD is also broadening the talent that it already has, with a rotation program that included a total of 12 engineers in 6-month assignments in FY18. These rotations provided engineering staff an opportunity to work in different work units, develop new skills, and improve relationships, while learning what other engineers do in other work groups. The rotation program continues to be a great recruiting tool and learning opportunity that benefits participating engineering staff. The program includes engineers from the Engineering and Construction, Wastewater, Water & Natural Resources, and Operations and Maintenance Departments.

## Embracing the Values

Staff continued expanding its reach to all employees in FY18 through the following efforts:

- 2018 State of the District Address – This year's address focused on teamwork and the contributions of employees to EBMUD success. Over 1,000 employees attended the 10 sessions held at 8 District locations.
- Values Advocates Graduation – The Values program graduated its first group of Advocates in June 2018. Twenty-five employees completed nine months of training with the Values Embedding team to increase their



understanding, prepare them to be advocates for the values-based culture, and be liaisons between their work groups and the values efforts.

- Improvements in the New Employee Onboarding Process – The Performance Team sponsored work to enhance and modernize the onboarding process and provide a consistent onboarding experience.

**Coming up:** For FY19, all management team members will complete a Values Self-Assessment as part of their performance planning and assessment process.

## Community Outreach

EBMUD's employees are ambassadors in our communities (peer, industry, education to educate and share knowledge about the District's culture, values, career opportunities and work).

District employees staffed 41 outreach events (career fairs, presentations at high schools, community colleges, and community service organizations).

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# Customer & Community Services

## Bill Paying Made Easier

Electronic billing saves time and money for EBMUD and its customers. EBMUD's enhanced online payment system has continued to improve the customer's bill payment experience. In FY18, the number of customers enrolled in electronic bill delivery increased from approximately 56,000 to 83,000. Efforts to increase customer electronic bill payments are consistent with EBMUD's Strategic Plan as it fosters environmental and fiscal stewardship and promotes enhanced services for our customers.



## Reaching Out to the Disadvantaged

In FY18, EBMUD launched the Water Lifeline Program by partnering with St. Vincent de Paul Society of Alameda County and Catholic Charities of the East Bay. The Water Lifeline Program allows employees and customers to make online donations to support EBMUD's CAP customers who are facing financial emergency and cannot pay their water bills. All donations go toward helping CAP customers to keep the water service on.

## Streamlining New Water Service

EBMUD launched an Online Water Service Application to reduce paper waste and streamline the application process for customers. The online application allows customers to submit applications, upload all of the submittals required into online portals, and track their application's progress. This new application is consistent with EBMUD's Strategic Plan by investing in business process improvements and technology to enhance the customer experience.

## Odor Control at the Main Wastewater Treatment Plant

EBMUD's Strategic Plan includes an objective to "minimize customer and community impacts from water and wastewater operations." The Strategic Plan establishes a KPI for FY17 and FY18 of less than or equal to 30 customer odor complaints per year from the MWWTP. In FY18, EBMUD met the KPI; staff received 17 odor complaints where the MWWTP was determined to be the probable source of the odors. This is 11 fewer complaints than FY17.

