Rising to the challenge

EAST BAY MUNICIPAL UTILITY DISTRICT
2014-2015 Biennial Report

Drought.

It's one of the greatest tests for a water and wastewater agency. Throughout the state, years of dry weather have left their mark. As our water supplies decreased to near-record lows, we rose to the challenge and met the East Bay's water needs thanks to lessons learned from the 1970s drought and years of subsequent planning that readied us for the next drought. For the past three decades, we have focused on developing new approaches to protect and stretch the East Bay's water supplies. Because of our investments in conservation, recycling and supplemental supplies, we are managing this drought without drastic consequences.

Water supplies from the Sacramento River were delivered to East Bay taps through the Freeport Regional Water Facility in summer 2014, in time to bridge the water supply gap when our Mokelumne River supply was stressed. Water transfers from entities in the Sacramento Valley shored up our supplies. We collaborated with the Bureau of Reclamation to manage the flows on the Sacramento River and diversions at Freeport to balance our water supply needs and fishery obligations. To protect fish and their habitats, EBMUD changed water flows and gave fish a truck ride to help them on their journey to and from the Mokelumne River. We will continue this work, plus enhance natural spawning grounds below Camanche Dam to support the environment that we rely on for clear crisp drinking water.

Importantly, our customers stepped up over the last two years, reducing water use 17 percent overall since February 11, 2014, which saved about 70,000 acre feet of water. Drought, like any emergency, is expensive. To pay for the cost of additional supplies and drought operations EBMUD established a drought rate structure and implemented a drought response fund to supplement contingency funds.

EBMUD continues to invest in infrastructure to reliably deliver safe water and treat wastewater. As we embark on our Pipeline Rebuild initiative, we are rethinking how best, and at what pace, to renew pipes to ensure reliability. This project will require our teams to work together and learn from each other. Like a road map, EBMUD's core values of stewardship, integrity, respect and teamwork will guide our daily work and shape the District's future. These values are solidified as a result of an organizational assessment that helps address the challenges we face due to anticipated turnover in our aging workforce.

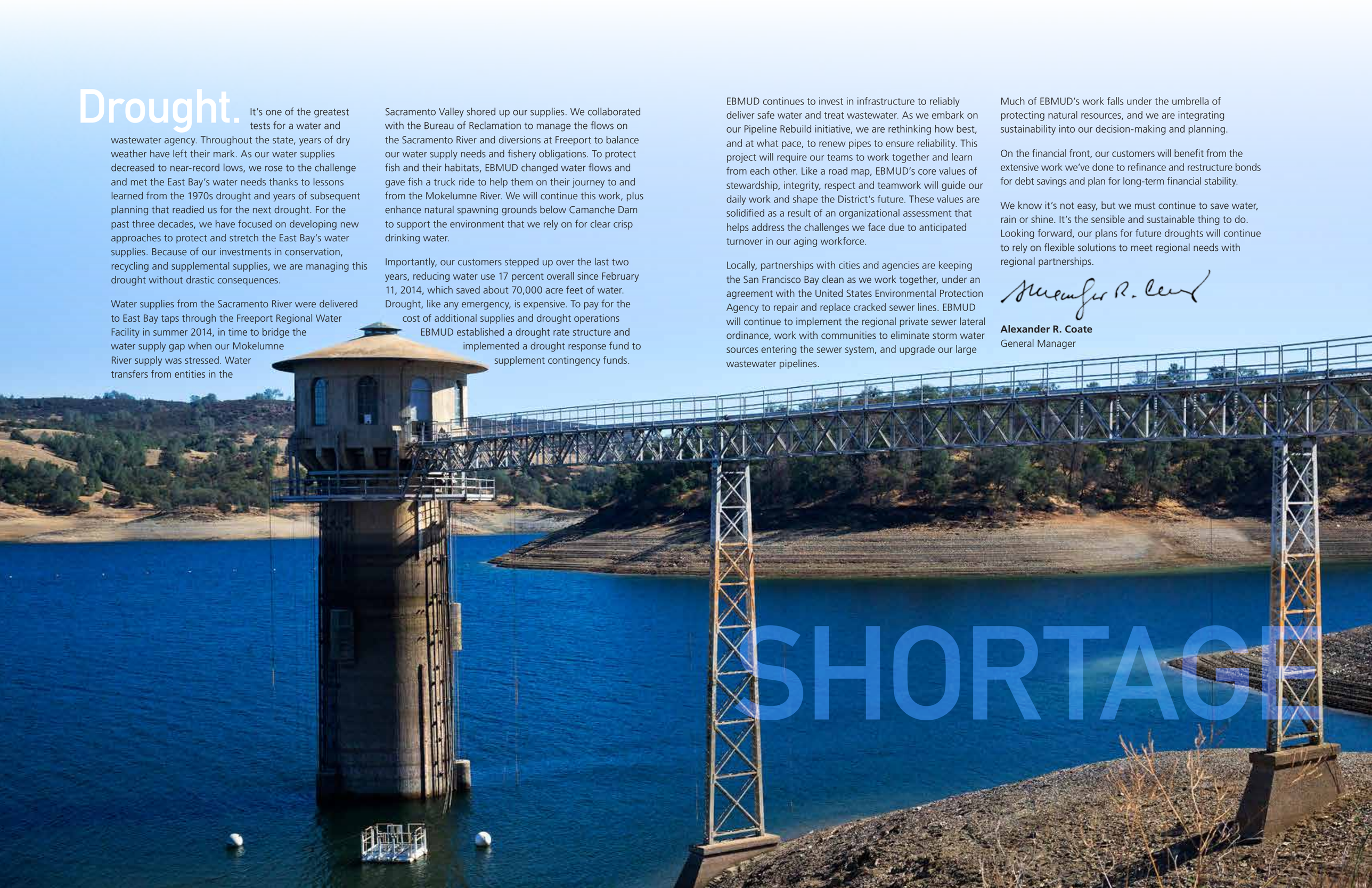
Locally, partnerships with cities and agencies are keeping the San Francisco Bay clean as we work together, under an agreement with the United States Environmental Protection Agency to repair and replace cracked sewer lines. EBMUD will continue to implement the regional private sewer lateral ordinance, work with communities to eliminate storm water sources entering the sewer system, and upgrade our large wastewater pipelines.

Much of EBMUD's work falls under the umbrella of protecting natural resources, and we are integrating sustainability into our decision-making and planning.

On the financial front, our customers will benefit from the extensive work we've done to refinance and restructure bonds for debt savings and plan for long-term financial stability.

We know it's not easy, but we must continue to save water, rain or shine. It's the sensible and sustainable thing to do. Looking forward, our plans for future droughts will continue to rely on flexible solutions to meet regional needs with regional partnerships.

Alexander R. Coate
General Manager



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Facing drought

The past four years marked the driest period in EBMUD history. Disappointing snow levels and precipitation meant reservoirs did not refill. EBMUD worked tirelessly to implement our comprehensive drought plans.

EBMUD learned much from the 1977 drought, especially that our customers are great at conserving. That experience also revealed the pain felt by residents and our local economy when 30 percent mandatory water rationing was imposed. To limit future hardship, EBMUD and its ratepayers invested nearly $1 billion to diversify and increase water supplies during the last three decades.

The result? In addition to its main water source – the Mokelumne River watershed – EBMUD was able to, for the first time, purchase and deliver emergency water supplies from the Sacramento River to supplement dwindling supplies, secure connections between neighboring water systems and partner with customers to increase conservation.

Before the drought, campers typically enjoyed a waterfront campsite at Monument RV Park at Camanche South Shore. Now, this area is arid.

Water from diverse sources

Today's water supply portfolio includes aggressive conservation, emergency supplies from the Sacramento River and water recycling.

Because conservation, though significant, was not enough to meet the East Bay's needs during this drought, EBMUD purchased 18,600 acre feet of emergency water supplies through a federal contract with the U.S. Bureau of Reclamation in 2014, and another 33,250 acre feet in 2015.

Statewide conditions due to extreme drought resulted in drastic cuts to EBMUD's federal water supply contract. To bridge the gap, EBMUD partnered with Sacramento Valley entities to purchase 4,750 acre feet in 2014 and 25,000 acre feet in 2015. These water transfers underscore the importance of partnerships, especially during drought. This is the framework we established with water agencies such as Placer County Water Agency and the agricultural districts Sycamore Mutual Water Company and Reclamation District 1004. These transfers have a double benefit: they provide water in dry years for EBMUD customers while protecting natural resources by keeping water in the lower American and Sacramento rivers when salmon need it. Purchasing emergency water supplies came at a cost of $16 million for 2015 and will be paid through a temporary drought surcharge of 25 percent on all customer bills.

In the East Bay, regional water agencies are working together to improve water supply reliability by using existing facilities in ways that benefit multiple stakeholders. The Bay Area Regional Reliability partners are also moving forward with a plan to evaluate projects that would hasten drought recovery, strengthen emergency response and improve water supply in the short and long term. Numerous projects will be evaluated, such as expanded water treatment, new connections between water systems and expanded groundwater and surface storage.

Since its inception, EBMUD has protected the health of the Mokelumne River watershed. However, many stakeholders along the river including EBMUD are grappling with competing needs for drinking water, the environment and recreation in the Upper and Lower Mokelumne watersheds. Recently, a group of more than 20 stakeholders completed the MokeWISE program – the Mokelumne Watershed Interregional Sustainability Evaluation. The group focused on developing alternatives to manage water resources to meet the needs of regional stakeholders and the river. They crafted a plan for future projects that cut across boundaries, and will seek funding for plans that aim to protect and improve water quality, water supply and the river ecosystem.

The drought brought challenges: reduced water supplies, restrictions on diverting water, changes in the taste and smell of EBMUD water due to warmer temperatures, lower reservoir levels and the introduction of Sacramento River water. Despite these challenges, we have weathered nature's hardships and we are prepared for whatever 2016 brings, whether it be dry, wet from El Niño, or somewhere in between.

Above: a courtesy dock at Camanche South Shore sits high and dry as water has receded from the launching facilities. Below: EBMUD Ranger Supervisor Mark Bolton examines Camanche Reservoir's dry lake bed. Camanche is EBMUD's largest Sierra reservoir.

Drought timeline 2014 »

Sep 30, 2013
EBMUD ended water year 2013 with 540,000 acre feet in storage.

Jan 17, 2014
Governor issued drought declaration.

Feb 11, 2014
EBMUD asked customers to voluntarily cut water use 10% from 2013. Customers responded with 13% conservation. EBMUD committed to saving up to 20% at its facilities.

Feb 25, 2014
EBMUD approved purchase of 4,750 acre-feet of transfer water from Placer County Water Agency.

Apr 22, 2014
EBMUD approved purchase and delivery of 18,600 acre feet of Central Valley Project water from the Sacramento River.

Aug 12, 2014
EBMUD adopted Water Shortage Emergency Regulations and mandatory state-wide outdoor watering restrictions.

Sep 30, 2014
EBMUD ended water year 2014 with 404,000 acre feet in storage– the 7th lowest end-of-September storage in EBMUD history. Our situation was improved due to customer savings of 15,000 acre feet and the emergency supply purchase of 23,350 acre feet.

Nov 4, 2014
EBMUD and Dublin San Ramon Services District tested emergency water connections.

Nov 7, 2014
EBMUD received $2 million grant to expand San Ramon Valley Recycled Water Program.

Oct – Dec 2014
EBMUD held community meetings on water supply and drought rates.

Dec 5, 2014
EBMUD asked customers to voluntarily increase conservation to 15%.

Conservation expert Scott Sommerfeld shows gardeners how to install in-line drip irrigation, a more efficient option to water landscapes.

Reaching out during drought

To connect with customers, we used many methods to deliver the drought message.

- *The Board of Directors held community meetings to discuss limited water supplies, proposed drought stages and drought charges. Spanish and Chinese interpreters were provided.*
- *Calls were made to 145,065 residential customers announcing conservation goals and outdoor watering restrictions.*
- *Multilingual billboards and bus shelter ads in 260 locations promoted conservation.*
- *Fix a leak week partnerships were established with 41 local hardware stores.*
- *Postcards and mailers to renters and non-bill payers advertised our online WaterSmart calculator and explained mandatory restrictions.*
- *Bill paying customers received our **Customer Pipeline** newsletter with drought updates.*
- *Over 200 community workshops and events were held to support conservation.*
- *Drought updates and water conservation resources available on ebmud.com.*
- *Customers likely to incur the excessive use penalty were sent letters.*
- *Drought theatre shows were presented at community events.*

Drought timeline 2015 »

Apr 14, 2015

Near-record low water supply. Stage 4 drought was declared. EBMUD adopted 20% mandatory conservation District-wide to align with Governor's request. EBMUD revised mandatory state-wide outdoor restrictions and authorized purchase and delivery of 33,250 acre feet of Sacramento River water from the U.S. Bureau of Reclamation via Freeport.

Apr 15, 2015

Emergency Central Valley Project water from the Sacramento River began flowing into East Bay reservoirs.

Apr 17, 2015

EBMUD received the Notice of Unavailability of Water from the state. EBMUD complied with the State Water Resources Control Board order to curtail runoff resulting in the District releasing 24,000 acre feet of runoff down the Mokelumne River.

Apr 28, 2015

Purchase of up to 21,000 acre feet of emergency water supplies authorized through water transfers with agricultural districts in the Sacramento Valley.

May 26, 2015

Purchase of up to 12,000 acre feet of emergency water supplies authorized through a water transfer with the Placer County Water Agency.

Jul 1, 2015

Staged system of drought rates began, excessive use penalties and water theft ordinance in effect; drought surcharge of 25% in effect.

Sep 30, 2015

EBMUD ended the 2015 water year with about 355,000 acre feet in storage – the 4th lowest end-of-September storage in EBMUD history.

Thank you for using less

East Bay customers surpassed EBMUD's and the Governor's request to reduce water use. We saw record-breaking interest in all rebate programs, especially for customers converting their lawns to WaterSmart landscapes.

From February 2014 to date, East Bay homeowners said goodbye to more than 2 million square feet of turf. EBMUD's partnership with nurseries helped customers find beautiful, climate-appropriate plant choices with WaterSmart tags. "Lawn goodbye" signs marked homes that let their front-lawns go brown to save water.

During that same time frame, EBMUD provided 8,000 rebates for high-efficiency toilets and over 11,000 rebates for high-efficiency clothes washers resulting in savings of approximately 70 million gallons of water annually.

Customers took advantage of new tools. Home water reports, sent every other month to 60,000 customers, provide a benchmark, tailored conservation tips and rebate information so that single-family residents can target efforts to save.

Videos on ebmud.com provided tips from our conservation experts on how to set an irrigation controller, how to install a drip system and the benefits of mulch. The new online WaterSmart calculator helped homeowners and renters alike analyze how and where they use water indoors and out. Free Home WaterSmart survey kits made it easy to measure water use in the home. If water-guzzling fixtures or leaks are found, EBMUD has free devices like faucet aerators and showerheads to reduce the flow.

The drought increased awareness of water waste with residents taking notice of their neighbors' leaks, over-irrigation and runoff. EBMUD received nearly 6,000 water waste complaints. These notifications helped us work directly with customers to fix leaks and identify those not following outdoor watering rules.

EBMUD's helpful, less punitive approach in working with customers during the drought was successful in almost every case, yet some regulation was necessary. Excessive use penalties were in effect as of September 2015, which carried financial and other consequences for customers using a daily average of more than 1,000 gallons for a billing period during a Stage 4 declared drought emergency. Though not directly tied to the drought, EBMUD enacted an aggressive water theft ordinance that penalizes those who steal water from other customers or take water without paying for it.

We asked our largest landscape irrigation customers to target a 40 percent reduction in their water use. Many golf courses answered the call and achieved the requested savings. Since 1999, large irrigators have received customized water budgets that provide a watering goal for each property based on landscape area, type of plants and location. This information helps landscape managers find the best opportunities to cut back. Good management, combined with "smart controllers," drip irrigation and efficient spray systems, can lead to tremendous water and dollar savings. For new developments, EBMUD requires water-efficiency standards and reviews landscape plans, so that developments can be efficient for years to come.

EBMUD also reached out to commercial and hospitality businesses with its WaterSmart Business Certification Program, working with entities to reach larger conservation targets. Cities received water use data so they could judge their conservation efforts and make adjustments. Cities and other local stakeholders also pledged to work with us on drought outreach activities, and many did just that.

Though customers are doing a great job conserving, there is always room to improve. We will continue to offer assistance, inspiration, tools and technologies to help customers manage water use.

Conservation by the numbers

2 million square-feet of lawn removed

60,000 customers enrolled in Home Water Reports

11,000 rebates provided for high-efficiency clothes washers

8,000 rebates provided for high-efficiency toilets

6,000 water waste complaints received by phone and online

73 East Bay businesses and entities certified as "WaterSmart" since 2010

Using water, again

EBMUD's Mokelumne River serves customers in wet and normal years, but supplies are limited during droughts. To extend our primary water supplies, across California more work is going into cleaning wastewater and reusing that water. Recycled water is used to irrigate outdoor landscapes like golf courses, parks, medians, schools and common residential landscapes and indoors for cooling systems, toilet flushing in commercial buildings and for industrial processes.

In addition to the 8 million gallons a day of recycled water already being used, EBMUD is undertaking pipeline construction to deliver another estimated 400,000 gallons a day to customers in Emeryville and San Ramon.

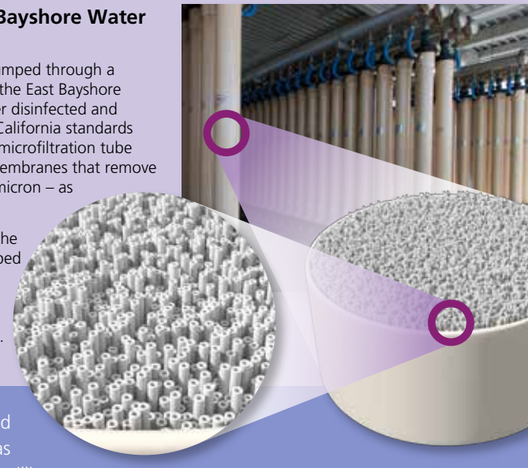
EBMUD's East Bayshore Recycled Water Project now includes a recycled water pipeline along Buchanan Street, thanks to coordination with the city of Albany. In Emeryville, recycled water pipelines will extend along Shellmound Street and Christie Avenue. Design is complete and construction will proceed thanks to a $1 million state grant. In the San Ramon Valley, design for recycled pipelines to serve Bishop Ranch and surrounding areas is finished. A $2 million state grant will help pay for construction costs. Crews began work on both projects in summer 2015. Neighbors will see crews installing purple colored pipes, indicating recycled water, through 2016.

How recycling works

Spotlight on East Bayshore Water Treatment Plant

Treated wastewater is pumped through a microfiltration system at the East Bayshore Plant before being further disinfected and tested to meet rigorous California standards for recycled water. Each microfiltration tube contains 6,000 hollow membranes that remove particles as small as 0.1 micron – as small as bacteria or dust.

Particles are trapped on the outside of the straw-shaped membranes, while clean water passes through to the center of the straws and then out of the filter.



Drought solutions require creativity

Providing recycled water for industries is an important piece of EBMUD's recycled water plan. We continue to partner with local refineries to use and study recycled water for operational needs, including service to Chevron's Richmond Refinery, a large recycled water customer.

Diablo Country Club is exploring a satellite recycled water project with EBMUD which, if implemented, will demonstrate how a local water user can cost-effectively build and operate an on-site, small scale water recycling facility.

In May 2015, we tapped into our San Leandro-Alameda recycled water transmission line to allow the Port of Oakland to use recycled water for dust control, compaction and other construction uses on a major runway expansion project. The project conserves enough drinking water to meet the needs of more than 1,600 people a day.

In the developed East Bay, installing new recycled water pipelines is costly. EBMUD provides an alternative: free fill-ups of recycled water at the Oakland wastewater treatment plant for commercial water trucks that can load recycled water for construction, street cleaning, power washing, sewer flushing and irrigation.

What's next? EBMUD will expand recycled water projects in San Ramon and along the East Bayshore. We also will work with more local refineries to look at expanding recycled water service. As the drought continues, EBMUD will expand the commercial truck recycled water program and will evaluate recycled water fill stations for residential customers.

Prevent leaky surprises

REBUILD

A resilient water system

EBMUD's system of reservoirs, treatment plants, pipelines and pumps require planned maintenance and replacement to ensure customers have water whenever they need it. From 2016 to 2020, EBMUD will embark on a 5-year Capital Improvement Program, to push forward with $1.54 billion in critical replacement and rehab projects on key segments of the $14.4 billion in infrastructure assets the district manages and operates across seven counties. The increased investments will keep our water system running efficiently.

In the East Bay, 4,200 miles of pipelines weave through neighborhoods and under streets. That is enough pipe to stretch from Oakland to Chicago and back. Some of these pipes are now more than a century old. EBMUD maintains these pipes, needed to deliver water to 1.4 million customers. But pipes break. Crews repair about 870 pipeline breaks every year. Because emergency repairs inconvenience neighbors and are expensive, EBMUD uses acoustic technology to detect small leaks before they become large breaks.

EBMUD installed more than 800 acoustic loggers to find leaks before they surface. The loggers listen for the sounds of water escaping from pipes. Finding leaks early allows us to repair pipes on a planned basis, reducing potential damage to streets, property and the environment.

Using acoustic technology, EBMUD plumber Michael Brown tracks down hard-to-find leaks in EBMUD's distribution system.

EBMUD replaced an aging 12,000-foot segment of pipe that delivers water to customers in the central Oakland Hills.

Old infrastructure. New pipes.

EBMUD crews have typically replaced about 10 miles of pipe each year. An effort to renew more pipes is underway, as EBMUD launches Pipeline Rebuild to increase the pipe renewal rate from 10 miles to 40 or more miles annually. This increase in pipeline renewal will put EBMUD on a 100-year replacement schedule. When we complete one cycle of replacement it will be time to begin again.

A new team has formed, with increased staff and two new pipeline crews to tackle this effort. We are researching new technologies, materials and installation methods to determine what is best and most cost effective.

» *Water service to Alameda is supplied by four underwater pipeline crossings at three separate locations. Failure at any of these locations could reduce water supply to Alameda and North Bay Farm Island. EBMUD plans to replace three 24-inch diameter transmission pipelines to improve reliability and update aging infrastructure. EBMUD is preparing the environmental documentation for this project.*

EBMUD crews repaired a leak on the largest of three aqueducts that deliver water to 1.4 million East Bay residents. The crews dug up a buried 87-inch diameter pipeline in Walnut Creek to make the repair.

EBMUD welder Artur Amaral at work repairing an aqueduct in Walnut Creek.

» *In Oakland, EBMUD replaced a 12,000-foot segment of aging pipeline, which delivers water to 45,000 residents in the central Oakland Hills, and 3,000 feet of 54-inch diameter pipeline near the Caldecott Tunnel. This work was performed to reduce service disruptions and minimize the costs of repairing leaks and maintaining old pipelines from the 1930s.*

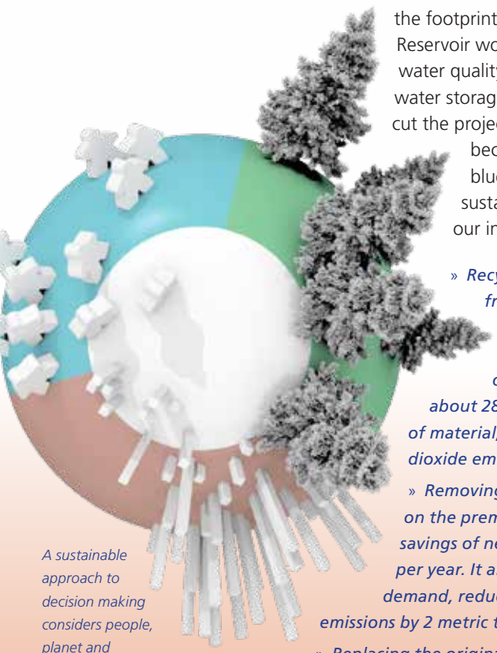
» *The water storage tank at the San Pablo Water Treatment Plant in Kensington is an important reservoir for the area but nearing the end of its service life. EBMUD will demolish the 5.4 million-gallon tank and replace it with two smaller concrete tanks. EBMUD is rehabilitating portions of the San Pablo Water Treatment Plant as well. As part of this project, EBMUD will improve the nearby San Pablo water tunnel to isolate it from San Pablo reservoir in the event of an earthquake. Construction on these projects began in 2015 and will last through summer 2019.*

Sustainability in everything

EBMUD has adopted short-and long-term strategies to plan and prepare for an uncertain future including the effects of climate change. EBMUD explored many scenarios due to rising temperatures and variable precipitation to understand the potential impacts of climate change to our water supply, water demand and water quality. Adopting a triple-bottom line approach means considering the people, the planet and performance in everything we do including water supply planning, sustainable infrastructure and reducing greenhouse gas emissions that contribute to climate change.

Blueprint for future construction

In the Oakland Hills, a 110-year-old, 17.6 million gallon, reservoir needed replacing. The $22 million construction of two water storage tanks built within the footprint of the old Estates Reservoir would mean improved water quality by removing excess water storage. The strategies to cut the project's carbon footprint became more like a blueprint for how to build sustainability into our infrastructure.



A sustainable approach to decision making considers people, planet and performance.

- *Recycling concrete onsite from the demolition eliminated traffic that would have otherwise hauled away about 285 dump trucks' worth of material, thus reducing carbon dioxide emissions by 47 metric tons.*
- *Removing a decorative fountain on the premises resulted in water savings of nearly 500,000 gallons per year. It also lowered energy demand, reducing carbon dioxide emissions by 2 metric tons each year.*
- *Replacing the original three-acre roof structure with a green roof allowed for a landscape design with native plants.*
- *Reusing over 700 wooden beams from the old reservoir meant materials were given a second life.*

In spring 2015, the new tanks were completed. To recognize this innovative work, the American Society of Civil Engineers awarded the Estates Reservoir Replacement Project with the Outstanding Water/ Wastewater Project of the Year. The award recognizes projects that improve upon existing engineering methods. Project leaders encountered challenges throughout the planning, design and construction that elevated the significance of this project.

Greening the marketplace

In May 2015, EBMUD issued $74 million in green bonds to shape an emerging market and attract investors interested in funding sustainable infrastructure.

EBMUD committed to a high standard for sustainability by developing stringent criteria for projects to be funded with green bonds. In the first-ever inventory of sustainable district projects, 20 were determined to achieve at least one of the following objectives for green bond financing:

- *Maintain water quality*
- *Improve water use efficiency*
- *Improve biodiversity and ecosystem quality*
- *Protect against flooding*
- *Reduce pollution*
- *Improve resilience to climate change*
- *Reduce the combustion of fossil fuels*
- *Reduce greenhouse gas emissions*
- *Implement reduce, reuse and recycle practices in preference to raw materials*
- *Adhere to sustainable purchasing guidelines*

The response to the green bonds issued was positive. The green bonds sold within minutes at prices on par with traditional bonds.

Accelerating energy generation

EBMUD set a goal in 2008 to reduce its greenhouse gas emissions by 10 percent by 2015 compared to 2000 levels. In 2014, EBMUD's greenhouse gas emissions were 18 percent below 2000 levels. Due to the drought, more energy intensive operations were necessary including pumping from our emergency water supplies. This will increase our emissions in 2015. Now, EBMUD is accelerating its plan to cut carbon emissions over the next 25 years. By 2040, EBMUD plans to slash direct emissions from activities such as fuel combustion by 50 percent compared to 2000 levels and be carbon free for indirect emissions – mainly from electricity.

Shrinking carbon emissions

18 percent reduction in EBMUD's greenhouse gas emissions compared to 2000 levels in 2014.

EBMUD is producing renewable energy from several sources including hydropower from Pardee and Camanche Reservoirs, photovoltaic at eight District facilities and biogas generation at the District's main wastewater treatment plant. EBMUD is continuing to explore opportunities to increase renewable power generation and plans to construct more installations in the future.

Conquering the green energy frontier

EBMUD's wastewater treatment plant helped pioneer the harvesting of materials that would have otherwise ended up in a landfill. By using a process called anaerobic digestion to convert discarded items such as food scraps, grease and other biodegradable wastes into energy, EBMUD became the first wastewater treatment plant in North America to produce more renewable energy onsite than is needed to run the facility.

In 2014, EBMUD's wastewater treatment plant generated 135 percent of its energy demand, enabling us to sell the surplus energy to neighbors such as the Port of Oakland. Onsite renewable electricity generation and surplus energy revenues reached record highs in 2014: 54,854 megawatt-hours and $1 million, respectively. Selling energy back to the electrical grid not only reduces fossil fuels and greenhouse gas emissions, the revenues provide savings for ratepayers.

With sights set on expanding EBMUD's green energy capability, we are banking on partnerships with Bay Area cities and agencies. A trash pickup contract between the City of Oakland and Waste Management was finalized in 2015. Waste Management will now deliver all of the city's restaurant food waste to EBMUD for processing. The District is now embarking on the construction of a pre-processing facility to remove non-biodegradable materials from food scraps. This facility will enable EBMUD to process 190 tons of food waste per day straight from collection routes, expanding our food waste digestion program beyond the 10 tons per day we currently process.

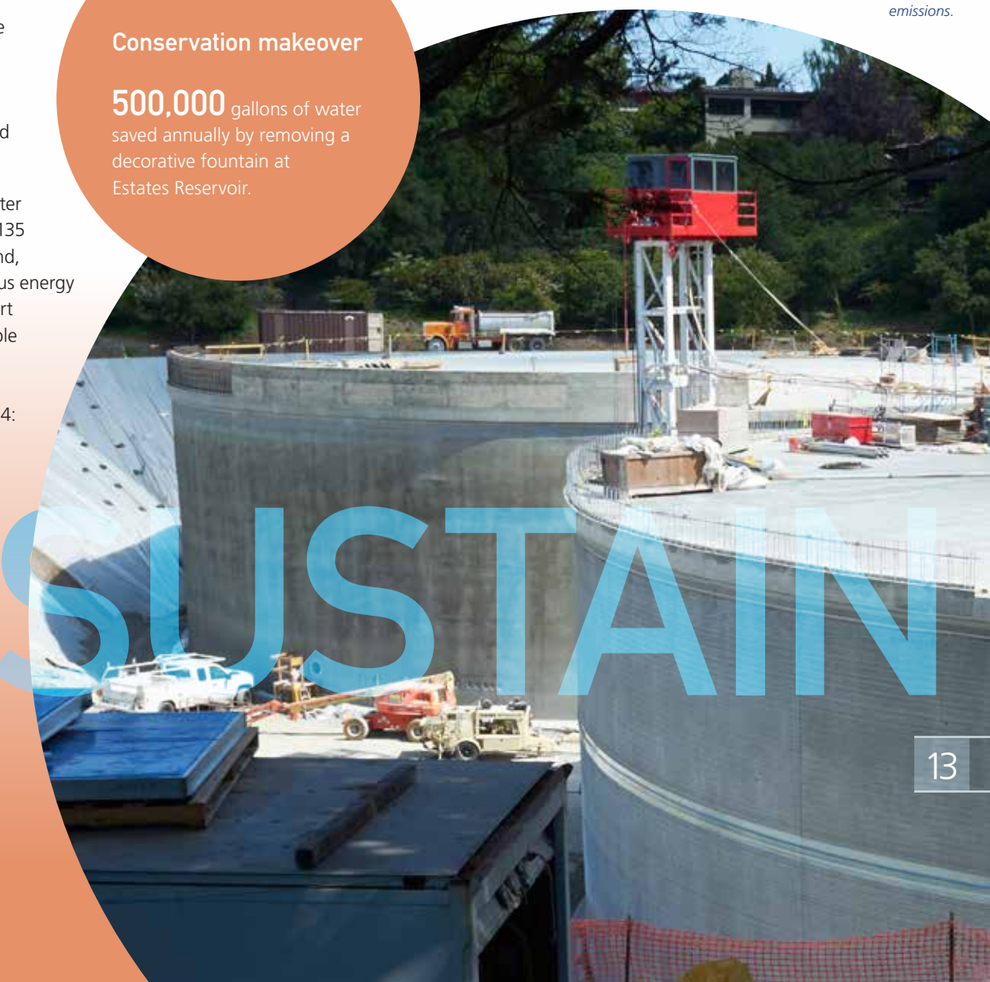
Today, we turn the energy created from food waste into electricity, but in the future, the possibilities are endless. In the near future, EBMUD plans to build a facility to turn some of the surplus energy into renewable vehicle fuel.

Record reached

54,854 megawatt-hours of renewable electricity generated at EBMUD's wastewater treatment plant in 2014. This is highest level generated since the program's inception.

Conservation makeover

500,000 gallons of water saved annually by removing a decorative fountain at Estates Reservoir.



To replace the 110-year-old Estates Reservoir, we recycled materials and cut construction-related carbon emissions.

SUSTAIN

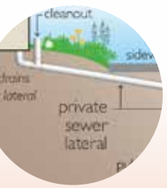
Partnerships promote a clean Bay

Cracked, leaky sewer pipes are a problem for the Bay. When too much rainwater seeps into the ground and enters the sanitary sewer system through leaky pipes, it can overwhelm the wastewater system, allowing partially treated sewage to enter San Francisco Bay during heavy storms.

Partnerships between EBMUD and agencies are driving efforts to keep San Francisco Bay clean. EBMUD and the communities in its wastewater service area (the cities of Alameda, Albany, Berkeley, Emeryville, Oakland and Piedmont and Stege Sanitary District) are collaborating as part of a consent decree with the United States Environmental Protection Agency, state and regional water boards, and two community organizations, which gives the agencies until 2036 to repair and replace cracked sewer lines. Almost half of the sanitary sewer pipes in the East Bay belong to private property owners, so the agencies are asking property owners to do their part to fix leaky pipes. Many property owners, whose homes were built decades ago still rely on their original private sewer laterals to connect their buildings to main sewer lines.

To keep the San Francisco Bay clean, EBMUD inspector Michael Walton conducts private sewer lateral tests to ensure leak-free pipes.

The Regional Private Sewer Lateral Program is a joint effort to work with property owners to repair leaking sewer pipes. Over 16,000 private sewer laterals have been certified as leak-free since 2011.



The Regional PSL Program helps property owners understand which pipes require leak-free certification.

As part of the consent decree, EBMUD will:

- *Continue to implement the Regional Private Sewer Lateral Program.*
- *Work with communities to eliminate the largest sources of stormwater entering the sewer system.*
- *Upgrade segments of its 29 miles of large wastewater pipelines.*

Emergency resources

The sustainable use of resources – in this case, the people who can turn water service back on – is a key part of emergency response. When the West Napa Fault ruptured in 2014, the 6.0 magnitude earthquake jolted the Bay Area and damaged infrastructure in the City of Napa, leaving many residents and businesses without water.

Fortunately, EBMUD and other utilities were unaffected by the earthquake, which freed up resources for Napa almost immediately. Facing more main breaks in its water distribution system than they typically get in an entire year, the City of Napa requested mutual assistance through the California Water/Wastewater Agency Response Network (CalWARN). This statewide partnership of water utilities, which includes EBMUD, joined forces to provide crews and equipment.

EBMUD crews worked with agencies including Napa, Alameda County Water District, Contra Costa Water District and the City of Fairfield. Days after the earthquake, the Bay Area water agencies repaired 144 main breaks with EBMUD crews having repaired 56 of them.

EBMUD crews repaired main breaks in the City of Napa following the magnitude-6.0 earthquake; the Bay Area's strongest in 25 years.

EBMUD participates in CalWARN and has separate agreements with the Los Angeles Department of Water and Power and the Las Vegas Valley Water District to provide mutual assistance after a disaster. With these partnerships, EBMUD is better prepared to get the water back on when a disaster strikes.

Despite drought, fish prove resilient

Cold water is vital to attracting salmon back to the Mokelumne River every fall. Amid the dry conditions affecting Northern California rivers, the EBMUD fishery program is making every effort to minimize impacts to salmon survival.

Although the 2015 fall salmon run on the Mokelumne had a late start, early winter counts were strong. This run eventually became one of the river's largest runs in over 70 years with more than 12,700 fish swimming upstream to spawn. This was the fifth consecutive year the number of Chinook salmon returning to the Mokelumne River exceeded 12,000 fish, nearly triple the river's long-term annual average. In 2014, 12,117 Chinook salmon returned to the Mokelumne River in the fall to spawn.

EBMUD has employed creative strategies and has doubled down on partnerships with over 20 agencies and organizations to ensure the viability of the Mokelumne salmon population. The strategies build upon a 1998 agreement between EBMUD and federal and state agencies to promote healthier conditions and beneficial flow releases to the Mokelumne River.

By modifying releases in early spring from Pardee and Camanche Reservoirs to the Lower Mokelumne River, enough savings are achieved to pulse higher flows to attract adult salmon in the fall. These variable flows mimic the effects of storms. Woodbridge Irrigation District, in Lodi, also on the Mokelumne River, has changed its dam operations to enhance the pulses from Camanche and conduct additional pulses.

To maximize cold water availability, EBMUD manages Camanche and Pardee reservoirs as one unit, which keeps the coldest water in Pardee until the fall when it is needed for spawning salmon. Beginning in September, cold water is released from the bottom of Pardee Reservoir to support the cold water pool in Camanche. This ultimately lowers the temperatures in the lower Mokelumne River, which is better for salmon spawning.

Strategies to improve juvenile salmon survival are also being implemented. The Delta is home to salmon predators such as largemouth bass and striped bass, as well as poor water quality conditions, both bad for salmon survival. To bypass these threats, EBMUD has trucked both hatchery and naturally produced juvenile salmon and released them at Sherman Island, northeast of Antioch, with positive results.

EBMUD and its partners continue to look for ways to minimize the impacts of the drought to protect the health of California's fish. The tactics have proven so beneficial in supplying cold water that in 2014 the Mokelumne River Fish Hatchery served as a refuge for rainbow trout from the American River Trout Hatchery, where water temperatures would have proven lethal.

Welcome home

12,700+ Chinook salmon returned to the Mokelumne River in the fall of 2015 to spawn, becoming one of the river's largest runs in over 70 years.

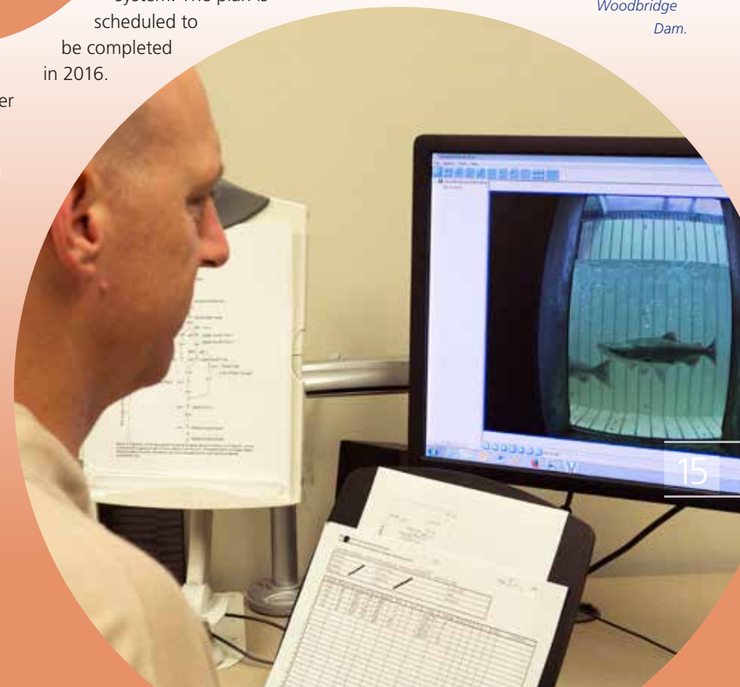
A renewed Watershed Plan

Originally adopted in 1996, the East Bay Watershed Master Plan provides guidance to EBMUD staff who manage the 28,000 acres of the East Bay watershed to protect water quality and biodiversity. With the last revision in 1999, EBMUD is now updating the plan to reflect the current issues affecting our watershed including drought and climate change impacts, management of invasive species, and local land use changes.

Many salmon enter the Mokelumne River Fish Hatchery at the base of EBMUD's Camanche Dam where eggs are collected and incubated.

Other updates include information on water quality, species inventory and adaptive management. Throughout this process, EBMUD will seek community input on policies regarding public access to our recreational trail system. The plan is scheduled to be completed in 2016.

EBMUD biologist Casey Del Real monitors video footage to count the returning salmon swimming past Woodbridge Dam.



Ready for today, prepared for tomorrow

Prolonged drought, reduced water sales and increased operating costs: EBMUD turned these challenges into opportunities by making smart financial moves that stabilized the organization and better equipped us to withstand future pressures.

Most notably, in fiscal years 2014 and 2015, EBMUD took advantage of low-interest rates to refinance and restructure our debt portfolio. The result: significant long-term debt savings.

Another critical move involved reducing variable-rate debt in favor of more predictable fixed-rate debt. These strategies also included managing actions to fill vacant staff positions as well as making more conservative and longer-term financial projections to offset reduced revenues.

EBMUD remains an attractive investment. Our current credit ratings (AAA rating by Standard & Poor's, Aa1 by Moody's Investors Service and AA+ by Fitch Ratings) are a result of sound fiscal management. Our credit ratings also save ratepayers money through the low cost of borrowing.

Encouraging public understanding

The call to engage the communities we serve became more important than ever given the ongoing financial challenges brought on by the drought. We conducted a year-long series of public workshops on long-term financial stability. The workshops examined short- and long-term impacts of operating and capital needs, financial policies, fixed versus variable costs and the effects of the drought.

These workshops formed the framework for the fiscal years 2016 and 2017 budget. Over the short-term, this framework allows us to pay for increasing drought costs, including additional water supplies to fill local reservoirs, and forms a contingency fund to reduce the impacts of a continued drought. Long-term, it sets us on the path to invest in needed water and wastewater infrastructure projects.

Our commitment to promoting public awareness of our programs, plans and financial policies is summed up in EBMUD's budget document. The biennial budget information for both the Water and Wastewater Systems provides detailed explanations of our operating and capital budgets, priorities and financial forecasts. Our budget documents have received 13 consecutive national awards recognizing effective presentation of materials that meet stringent guidelines as a policy document, operations guide, financial plan and communications device. EBMUD also has received 10 consecutive national awards for meeting requirements for financial statement presentation and compliance with government accounting, auditing and financial reporting guidelines.

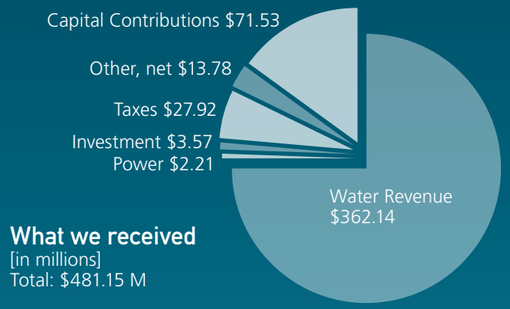
Water system	FY 2015	FY 2014
During the year		
Total Water Production, millions of gallons	56,832	67,154
Average Daily Water Production, MGD*	156	184
Maximum Daily Water Production, MGD	227	259
Minimum Daily Water Production, MGD	113	124
At year end		
Number of Accounts	381,076	380,542
Number of Employees	1,531	1,506
Miles of Water Distribution Pipe	4,200	4,115
Operating Distribution Storage Capacity, millions of gallons	668	678

Wastewater system	FY 2015	FY 2014
During the year		
Average Daily Wastewater Flow, MGD	55	56
At year end		
Number of Accounts	175,851	175,467
Number of Employees	262	254

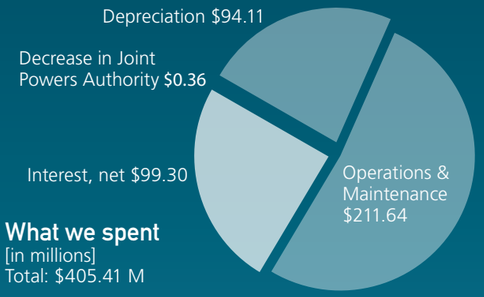
** MGD = millions of gallons per day*
Data as of January 2016

READY

Water system

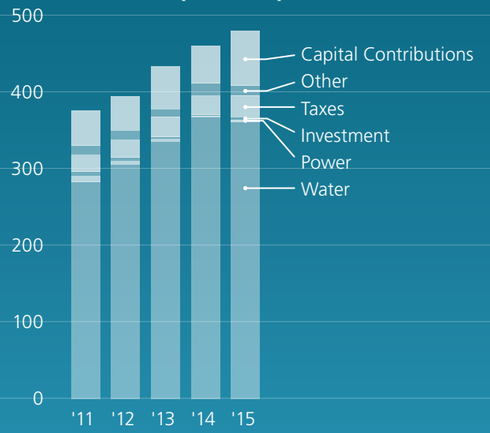


What we received
[in millions]
Total: $481.15 M

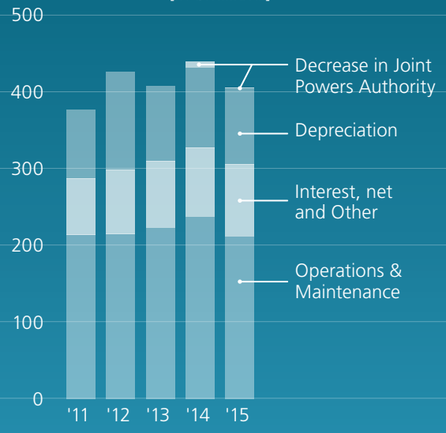


What we spent
[in millions]
Total: $405.41 M

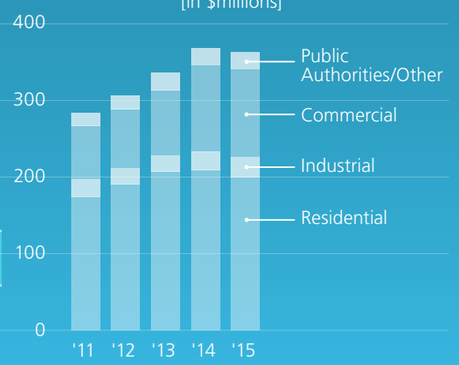
Total revenues
[in $millions]



Total expenses
[in $millions]



Water revenue
[in $millions]



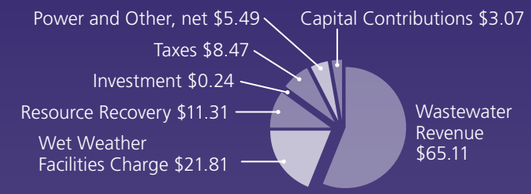
Water operating revenues and expenses decreased in 2015 compared to 2014 due to customer conservation efforts in response to the drought and the District's implementation of Government Accounting Standards Board No. 68 in 2015. While the District continued on-going cost saving measures, it also took advantage of low interest rates to refinance debt and lower debt service costs in the current year.

Total revenues for the Water System increased 4 percent from $462 million in 2014 to $481 million in 2015 primarily due to a $22 million increase in capital contributions offset by a $5 million decrease in water revenue due to drought-related conservation.

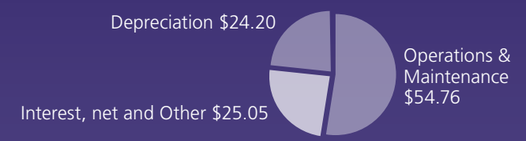
Total expenses decreased to $405 million in 2015 from $440 million in 2014, primarily due to the refinancing of outstanding variable debt to fixed rate debt and termination of associated swap agreements, benefitting from current low borrowing rates and GASB 68 implementation.

Water System cash and investments totaled $478 million at the end of fiscal year 2015. This included operating reserves of $165 million and capital reserves of $270 million which will be used to fund capital improvements.

Wastewater system

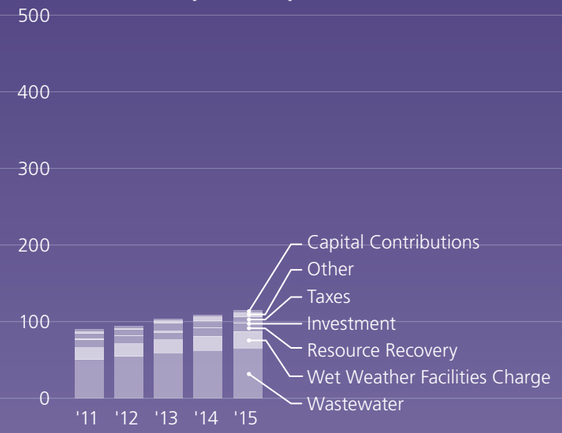


What we received
[in millions]
Total: $115.50 M

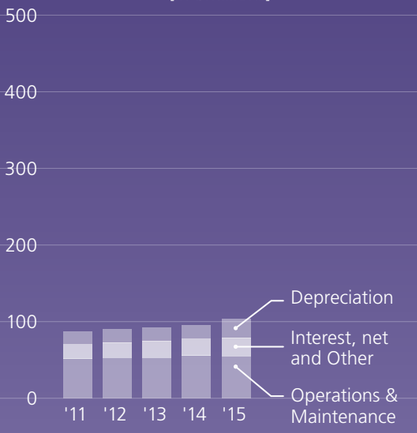


What we spent
[in millions]
Total: $104.01 M

Total revenues
[in $millions]



Total expenses
[in $millions]



Operating revenues and expenses have grown steadily over the past four years, with the difference between the two being used to fund debt service and capital improvements.

Total revenues for the Wastewater System increased 6 percent from $109 million in 2014 to $115 million in 2015, based on increases in sewage rate revenue, resource recovery and capital contributions.

Total expenses increased 10 percent from $95 million in 2014 to $104 million in 2015 primarily due to a one-time increase associated with a bond refunding which will substantially lower annual costs in subsequent years.

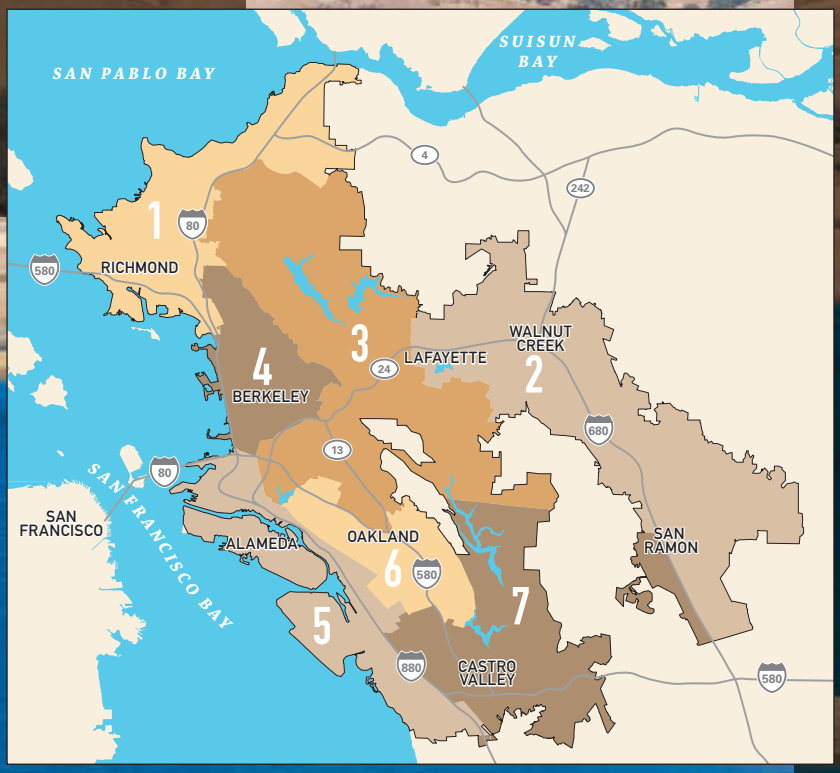
Wastewater System cash and investments totaled $92 million at the end of fiscal year 2015. This included operating reserves of $42 million and capital reserves of $50 million which will be used to fund capital improvements.

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.

MISSION

Wards



Service area

Board of Directors

Board member	Ward
Lesa R. McIntosh	1
John A. Coleman	2
Marguerite Young	3
Andy Katz	4
Doug Linney	5
William B. Patterson	6
Frank Mellon	7

Alexander R. Coate, General Manager

EBMUD provides high-quality drinking water for 1.4 million customers in Alameda and Contra Costa counties.

EBMUD's award-winning wastewater treatment plant generates renewable energy from waste and protects the San Francisco Bay on behalf of its 650,000 customers.

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