



**BOARD OF DIRECTORS  
EAST BAY MUNICIPAL UTILITY DISTRICT**

375 - 11th Street, Oakland, CA 94607

Office of the Secretary: (510) 287-0440

**Notice of Special Meeting**

**Budget Workshop No. 2  
Tuesday, March 26, 2019  
8:30 a.m.**

**Training Resource Center  
375 Eleventh Street  
Oakland, California**

At the call of President Marguerite R. Young, the Board of Directors has scheduled Budget Workshop No. 2 for 8:30 a.m. on Tuesday, March 26, 2019. The workshop will be held in the Training Resource Center of the Administration Building, 375 - 11th Street, Oakland, California.

The Board will meet in workshop session to discuss the FY20/FY21 Proposed Biennial Budget, Rates and Charges and follow-up items from Workshop No. 1 held on January 22, 2019.

Dated: March 21, 2019

A handwritten signature in cursive script that reads 'Rischa S. Cole'.

Rischa S. Cole  
Secretary of the District







**BOARD OF DIRECTORS  
EAST BAY MUNICIPAL UTILITY DISTRICT**

375 - 11th Street, Oakland, CA 94607

Office of the Secretary: (510) 287-0440

**AGENDA**

**Special Meeting**

**Budget Workshop No. 2**

**8:30 a.m.**

**Tuesday, March 26, 2019**

**Training Resource Center**

**375 Eleventh Street**

**Oakland, California**

**ROLL CALL:**

**PUBLIC COMMENT:** The Board of Directors is limited by State law to providing a brief response, asking questions for clarification, or referring a matter to staff when responding to items that are not listed on the agenda.

**DISCUSSION:**

1. Staff will present information for consideration and discussion relating to the FY20/FY21 Proposed Biennial Budget, Rates and Charges, and follow-up items from Workshop No. 1 held on January 22, 2019.

**ADJOURNMENT:**

**Disability Notice**

*If you require a disability-related modification or accommodation to participate in an EBMUD public meeting please call the Office of the Secretary (510) 287-0404. We will make reasonable arrangements to ensure accessibility. Some special equipment arrangements may require 48 hours advance notice.*

**Document Availability**

*Materials related to an item on this Agenda that have been submitted to the EBMUD Board of Directors within 72 hours prior to this meeting are available for public inspection in EBMUD's Office of the Secretary at 375 11th Street, Oakland, California, during normal business hours, and can be viewed on our website at [www.ebmud.com](http://www.ebmud.com).*



## EAST BAY MUNICIPAL UTILITY DISTRICT

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DATE: March 21, 2019

MEMO TO: Board of Directors

FROM: Alexander R. Coate, General Manager *ARC*

SUBJECT: Budget Workshop No. 2 – March 26, 2019

### SUMMARY

On January 22, 2019 staff conducted the first FY20 and FY21 budget workshop. This memo provides an overview of the workshops.

- Workshop No. 1 (January 22, 2019): Staff reviewed the District's progress on its long-term financial stability goals, and provided a preliminary projection of the FY20 and FY21 budget and rates, a summary of the wastewater cost of service study, and an update on recent activities in the District's programs for affordability for ratepayers. A memo responding to several questions and issues raised during Workshop No. 1 is attached.
- Workshop No. 2 (March 26, 2019): Staff will present the proposed FY20 and FY21 biennial budget including rates, fees and charges. Attachments to this memo include a summary of the rates and charges which will be covered in more detail in the General Manager's report on May 14, 2019, the biennial budget document which is comprised of two volumes, and the workshop presentation. Unless additional information is requested this workshop would be the last before the issuance of the Proposition 218 notice.

ARC:SDS:jmc

### Attachments

I:\Sec\2019 Board Related Items\Committees 2019\3-26-19Board Workshop 2\FIN - Budget Workshop2 transmittal.docx



## EAST BAY MUNICIPAL UTILITY DISTRICT

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DATE: March 21, 2019

MEMO TO: Board of Directors

THROUGH: Alexander R. Coate, General Manager *ARC*

FROM: Sophia D. Skoda, Director of Finance *SDS*

SUBJECT: Follow Up to January 22, 2019 Budget Workshop #1

This memo provides additional information requested at Board Budget Workshop #1.

### **Provide information on general obligation (GO) bond financing for capital improvements and other options used by water agencies to collect charges on the property tax roll**

In addition to issuing GO bonds that are financed by a tax on assessed value for properties within the District boundaries, staff has identified two other options for collecting water fees on the property tax roll – special benefit assessments and direct water charges. Both are subject to the requirement of California Constitution Article XIII D, commonly referred to as Proposition 218 (Prop 218).

GO Bonds Funded by Ad Valorem Taxes: GO bonds require a two-thirds voter approval and, if approved, the debt service is paid through levy of ad valorem taxes on the property tax roll. In the past, California water agencies commonly used GO bonds to fund water projects. However, with the passage of Proposition 13 (Prop 13) in 1978, the calculation of assessed valuation (AV) on properties was changed significantly. Under the Prop 13 rules, which caps ad valorem property tax rates at one percent of full cash value at the time of acquisition, properties that have changed ownership recently tend to have a significantly higher assessed value than properties that have not changed ownership for many years. A property can easily have an AV three times that of the neighboring property resulting in that property paying three times more than the neighboring one for the same improvements. In the case of school improvements, it has been argued that more recently transacted properties are more likely to house families with children and are therefore more likely to benefit from school improvements. Between this issue and the supermajority voter approval requirement, California municipal water agencies rarely issue GO bonds for new water projects.

Special Benefit Assessments: Subject to Prop 218 voter requirements, water agencies can impose assessments or standby charges on property within their jurisdiction. The process requires the preparation of an Engineer's Report which must specify the "special benefit" (as opposed to general benefit) received by the parcels that is the purpose for the assessment or standby charge. Special benefits are defined under the California constitution as "particular and distinct over and above general benefits conferred". By law, the assessments or standby charges



must be proportional to the special benefit received by the parcel. Following completion of the Engineer's Report, a mailed ballot election is held in which each affected property owner is informed of the proposed assessment or standby charge to be placed on their land. The owner may vote to support or oppose the proposed assessment or standby charge. If a majority of the ballots returned (weighted by the amount of the assessment or standby charge on the properties) are cast in support of the measure, it passes and can be implemented by the agency. Standby charges are usually imposed on both improved and unimproved properties. For ongoing standby charges, if more than 40 percent of property owners protest, the charge must be put on hold until the following year or put out to a vote of the affected properties. This type of charge is not used often since the adoption of Prop 218 because of the difficulty of demonstrating general versus special benefit to a given property from the specific improvements being constructed.

Water Service Charges Placed on the Tax Roll: Over the last 20 years, this approach has been used by several California water districts. In these instances, water service charges have been approved by a district's board of directors and placed on the county property tax rolls for collection without requiring voter approval. California law allows certain water and wastewater agencies to set rates and charges and collect them either via direct billing (monthly/bimonthly) or by placing the charges on the property tax roll. Collection of service charges via the tax roll is more common for wastewater agencies and less common with water agencies, as wastewater charges are often a fixed charge and therefore easy to place on one annual bill. Typically the majority of water charges are from variable charges based on actual metered water use which lends itself to direct billing.

In one instance, a water board adopted a fixed annual per parcel service charge termed "Fire Flow Fee," and collected on the tax roll to pay for fire flow-related capital facilities. Another water district, faced with the need to replace much of its existing water supply with a new imported water supply from the State Water Project, funded the new costs via a water service charge also collected on the property tax roll. This "Supplemental Water Supply Fee" was approved by the board and had a 15-year sunset. In both cases, the water charges were for specific purposes and had defined ending dates.

The same Prop 218 Notice and Protest Hearing process is used for approval of water service charges regardless of whether they are collected via direct billing or the tax roll. The District has legal authority to collect charges in this manner pursuant to the Health and Safety Code. However, this authority must be exercised in a manner that meets the procedural and substantive requirements of the Health and Safety Code, as well as the Municipal Utility District Act and Prop 218. One option under these laws is for the District to require the property owner to be the customer of record for those charges collected on the property tax roll. The District would need to update its Cost of Service Study to establish the basis for assessing charges against the property owner. Because the District does not maintain or track property owner information, matching up the customer of record with the property owner of record may be difficult.

### **Review of \$40 million projection for System Capacity Charge Revenue for FY20 and FY21 revenue budget**

As discussed in the January Board workshop, the financial plan used to set the FY20 and FY21 proposed water rates assumes \$40 million per year in System Capacity Charge (SCC) revenue. The SCC is assessed to new water service applicants to recover their appropriate share of the costs of water system capital improvements and future water supply. The annual revenue received depends on the number of new applicants for service and their associated water demand. The recent building boom in the District's service area has resulted in significant increases in the SCC revenue collected since FY16. The table below shows the SCC revenue collected since FY14 and the approximate equivalent 5/8" connections.

**SCC Revenues and Connections**

	FY14	FY15	FY16	FY17	FY18	FY19
SCC Revenue Collected	\$21M	\$30M	\$39M	\$51M	\$69M	\$58M through January
Equivalent Connections	800	1,400	1,900	2,300	3,000	2,400 through January

Over the last two years, the District has seen a significant growth in new multi-family residential (MFR) connections with about 60 percent of the SCC revenue coming from MFR, 20 percent from SFR and 20 percent from commercial/industrial applicants.

It is likely that by the end of June 2019, the District will have collected over \$70 million in SCC revenue for FY19. While it is difficult to know how long the recent building boom will continue in the service area, staff has taken a conservative approach and assumed that the number of FY20 and FY21 new connections would be similar to those that occurred in FY15 and FY16, about 1,600 new connections, which would result in about \$40 million in SCC revenue in FY20 and FY21. By assuming a conservative level of SCC revenue for FY20 and FY21, the District is able to maintain finances that are not overly dependent on SCC revenue, which can vary significantly year to year. When SCC revenue collections exceed the amount assumed in the financial plan, the additional revenue benefits the District and ratepayers by reducing the need to borrow for capital projects that have already been committed in the capital plan. Further, strong cash reserves mean that unlike in prior years, the District's finances could temporarily withstand SCC connections at a lower level closer to those seen in FY08 and FY09 if development were to suddenly decline.

### **Review the confidence limits on the water sales projection of 141 million gallons per day (MGD)**

The current projection for water sales for FY20 is 141 MGD. In an analysis comparing recent projections for water production to the actual water production levels, confidence on water sales



projections was approximately  $\pm 4$  MGD. However, there is less historical data in this lower range of water sales, so the confidence limits around the 141 MGD could be less than  $\pm 4$  MGD especially on the lower bound.

**Consider wording to emphasize “pass-through” nature of other agency charges on District bill and subtotaling District charges as part of “mini-makeover”**

A wording change made to the District’s “mini-makeover” bill statement was incorporated to emphasize the “pass-through” nature of other agencies’ charges. The updated statement is provided as Attachment 1. Staff has also been exploring the Board’s suggestion to include a subtotal of District charges since last year. Including a subtotal of District charges requires changes to both the District’s billing system as well as to the statement itself, affecting the spacing, alignment, and sizing of existing elements displayed on the statement. The addition of a new line item on the statement triggers programming changes that would require extensive development and iterative redesign, followed by a cycle of testing and regression testing to determine the changes are error free. Only after no errors are uncovered during this testing period would the changes be made visible to customers on their statement. This extensive development and testing process is necessary to ensure customers are presented with accurate statements, as inaccuracies could erode customer trust. Because of time required to develop and test changes to the statement, a subtotal of District charges will be included as part of a larger statement redesign project and is not part of the “mini-makeover” that will be rolled out once the District re-orders bill stock with the new template which will likely be in late June or July.

**Provide revenue impact of 0.1 percent changes in proposed water rate increase in FY20 and FY21**

The approximate changes to revenue collected for 0.1 percent more and less than the proposed 6.5 percent water rate increase for FY20 are shown below:

Rate Increase	FY20 Rate Revenue +/- from 6.5%
6.4%	-\$550k
6.6%	+\$550k

**Provide follow up on earthquake insurance for the District’s assets**

At the January Board workshop, staff explained how the District could recover financially from a major earthquake in the service area using its cash reserves, capacity to issue debt, and ability to raise rates. By continuing to follow the District’s long-term financial stability goals, the District will be in a sound financial position to meet the financial challenges of recovering from an earthquake. Attachment 2 is an information memo on the availability of earthquake insurance provided to the Board in October 2018.



**Consider multi-family residential customers separate from single family residential customers in future wastewater cost of service studies**

Currently, the wastewater cost of service (COS) study makes the assumption that the wastewater discharge characteristics for single family dwelling units and multi-family dwelling units in duplexes, triplexes and fourplexes are similar enough to be combined into one category. The wastewater discharge from large apartment buildings (five or more dwelling units) is assumed to have the same strength concentrations as wastewater from single family dwellings, with flow and strength charges calculated using the total water use for the apartment building and not based simply on the number of dwelling units. The District does not currently have sufficient data on the number of dwelling units in large apartment buildings in the service area to develop specific wastewater use characteristics on a per dwelling unit basis. A water demand study is currently underway that will look at the per dwelling unit water use in apartment buildings. In addition, the expansion of Advanced Metering Infrastructure (AMI) and individual dwelling unit submetering requirements will help in future evaluations. For future wastewater COS studies, staff will review this type of information on the per dwelling unit water use for apartments which can be used to develop specific wastewater characteristics for apartment buildings.

**Discounts for graywater systems as part of wastewater billing and/or wastewater capacity fee calculation**

While the District does provide conservation rebates for laundry-to-landscape and branch drain graywater system, the District does not currently offer a discount on the wastewater bill or wastewater capacity fee for customers who install graywater systems.

Because it is impractical, the District has no way to monitor the customer's operation of their graywater system. In addition, it is not permissible for graywater to be stored or diverted to a pond, so laundry-to-landscape systems are typically redirected to the sewer during winter months and periods of heavy rainfall.

The District's residential wastewater connection and wastewater fees are based on residential typical strength and flow characteristics. Due to insufficient graywater data on actual impact on wastewater discharge, low customer participation levels, and the structure of residential wastewater rates, staff does not recommend that the District offer a discount on wastewater fees for graywater systems at this time. The expansion of AMI and new graywater and submetering technologies, combined with an overall increase in water and sewer rates over time, will continue to help in the evaluation of graywater system costs and benefits for future consideration.

**Review of discount on the wastewater bill or capacity fee for composting toilets**

The District does not currently have active conservation programs that target composting toilets. Customers who do install composting toilets will see reduced water use and savings in water flow and wastewater flow charges. The current application of composting toilets has not reached

significant levels in urban areas. According to the San Francisco Public Utilities Commission website,

*“Composting toilets are well suited for rural areas or locations where water and/or sewer facilities are not available. They are installed in national parks, golf courses, and roadside facilities in both the United States and internationally and often found in regions of the world with severe water shortages. While rare, composting toilets have also been installed in urban areas as demonstration projects.”*

Even though composting toilets would divert the human solid waste from the sewer collection system, it would be difficult to justify a discount on wastewater fees because of the general structure of the District’s wastewater fee and the inability to monitor the operation of the composting toilet. In addition, the long term operation of composting toilets becomes more challenging as properties change owners or tenants. In discussion with colleagues in Australia, composting toilets are most commonly used in rural areas.

#### **Provide a summary of Customer Assistance Program (CAP) application acceptance rates**

Starting in 2017, staff began reporting CAP enrollment data as part of the General Manager’s Monthly Report. A summary of CAP applications received during 2017 and 2018, including the acceptance rates, is provided in Attachment 3.

#### **Report on any changes to District CAP eligibility criteria between FY12 and FY13**

During the Budget and Rates Workshop # 2 held on April 19, 2011, the Board amended the eligibility requirements for CAP customers by increasing the minimum qualifying income limits from 165 percent of the Federal Poverty Limit to 60 percent of the State median income, effective July 1, 2011 (start of FY12). Under this amendment, the CAP subsidy for water charges continued to be based on 50 percent of the water fixed service and flow charges. During the same workshop, the Board also added a subsidy for wastewater based on 35 percent of wastewater service fixed strength and flow charges that became effective January 1, 2012.

#### **Provide Internal Audit report with the findings on the PG&E CARE program enrollment verification**

Attachment 4 is a January 2018 Internal Audit memo that summarizes enrollment verification for PG&E’s CARE program from PG&E’s 2016 audit. The post enrollment verification study randomly selected 40,000 enrollees (out of 1.4 million enrollees) in the PG&E CARE program and asked them to provide follow up income documentation. More than 75 percent of those selected for verification were removed from the PG&E CARE program for failing to respond to the verification request or for failing to meet program eligibility criteria. Because of the issue with enrollment verification, the District discontinued using PG&E CARE program enrollment as one of the criteria to enable customers to participate in the District’s CAP program.



**Provide data on Saint Vincent de Paul and Catholic Charities referrals from the District and from others**

Saint Vincent de Paul (SVDP) tracks the total pledges approved and amount of assistance disbursed by fiscal year. During SVDP's 2018 fiscal year (October through September) 823 households requested assistance for District charges from SVDP and the amount disbursed was approximately \$190,000. Catholic Charities (CC) has not been tracking referrals due to resource limitations. However, CC estimated that its call center has received approximately 24 calls per month from customers requesting assistance for District charges since the program rolled out in October 2018.

**Assess avoided costs to District of reduction in delinquencies from retroactive CAP**

Since retroactive CAP can only be applicable after an account becomes delinquent, the District would not realize cost savings from avoided delinquencies. In contrast, retroactive CAP could create an incentive for first time CAP applicants to carry a past due balance to receive this benefit, which could increase the number of delinquencies resulting in slightly higher District costs from delinquencies. Once an account is past due, the District incurs the following costs:

- Issuance of water service interruption notice to customer (15-day and 48-hour notice)
- Work with the customer to establish payment plan
- Initiate proceedings to interrupt water service

The estimated average cost to manage a past due account is approximately \$5.00 per occurrence. While retroactive CAP could reduce the number of water service interruptions for CAP customers, a reduction in water service interruptions would not be a cost savings to the District, as the District still incurs costs and the customer is charged for field orders related to service interruption.

**Describe EBMUD programs to help customers who rely on large landscape irrigation for their business operation**

The District works closely with large landscape irrigation customers including homeowners associations, parks, golf courses, cities, counties, and businesses, helping them reduce water use through varied water management strategies and conservation incentives tailored to their operations. Under the District's rate structure, all irrigation customers are billed at the nonresidential uniform rate of \$5.29 per CCF, compared to SFR customers who are billed under a tiered water rates structure ranging from \$3.70 to \$6.83 per CCF. Large irrigation customers have benefitted from larger District conservation incentives for turf removal, irrigation equipment upgrades, smart controllers, pressure management and submetering.

The District's free Landscape Water Budget Reports have helped to inform commercial and large landscape customers about their landscape water use efficiency. Total potable water use for 10 service area golf courses between 2009 and 2018, with the exception of 2013, has remained efficient as a result of drought response and customer conservation efforts. Overall water

efficiency actions have demonstrated average reductions in water use ranging from 15 to 40 percent. These savings are anticipated to remain as golf courses have modified course layouts and operations on a permanent basis. Today, the average service area golf course water use has remained at approximately 70 percent of their target water budget. Recent award winning renovations at the Chuck Corica Golf Course in Alameda have eliminated almost all their landscape irrigation water use, reducing their EBMUD water bill by over \$400,000 per year.

ARC:SDS:rl

Attachments

I:\Sec\2019 Board Related Items\3-26-19 Board Workshop 2\FIN - Followup from 012219 Workshop 032119 Memo.docx



Next Read Date is 05/08/2019

**Your Payment is Due by 03/28/2019**

Every day, EBMUD customers rely on an underground network of infrastructure that delivers safe and clean water to every East Bay tap, and treats the wastewater from your home. Your rate dollars help maintain and upgrade these vital systems. Thank you for supporting EBMUD, your public, not-for-profit water agency. Learn more at [ebmud.com](http://ebmud.com).



Florence Waters  
1234 PIPELINE ST  
OAKLAND, CA 94607-1234

Bill Date: 03/13/19

**Billing Period (60 Days)**

From	To
1/7/19	3/8/19

For: 1234 Pipeline St  
Private Residence

AMOUNT

TOTAL

**PREVIOUS CHARGES AND CREDITS**

PREVIOUS AMOUNT DUE

205.84

FULL PAYMENT - 01/17/19

-205.84

0.00

**EBMUD - WATER CHARGES**

WATER SERVICE CHARGE

49.26

WATER FLOW CHARGE 10 UNITS @3.76

37.60

86.86

**EBMUD - WASTEWATER CHARGES**

WASTEWATER TREATMENT CHARGE

41.10

SF BAY POLLUTION PREVENTION FEE

0.40

41.50

**PASS THROUGH CHARGES FOR THE CITY OF OAKLAND SEWER SERVICES**

80.16

PLEASE SEE REVERSE SIDE  
FOR ADDITIONAL INFORMATION

**TOTAL CURRENT CHARGES****208.52**

METER SIZE	ELEV. Band	METER READINGS		UNITS	CONSUMPTION INFORMATION		
		Current	Previous		Gallons	Days	Gal/Day
5/8 inch	1	524	514	10	7,480	60	<b>125</b>
		LAST	YEAR	10	7,480	64	116

PLEASE DETACH AND RETURN THIS PAYMENT STUB WITH CHECK OR MONEY ORDER PAYABLE TO EBMUD

1234 Pipeline St, Oakland, CA 946071234

1/7/19

3/8/19 ACCOUNT NO.: 12345678001

Pay by credit/ATM/e-check for a fee.

Call 1-888-963-0909

Mail payment to:

TOTAL PREVIOUS

0.00

TOTAL CURRENT

208.52

EBMUD PAYMENT CENTER

PO BOX 1000

OAKLAND CA 94649-0001

Please Pay This Amount Now Due

**208.52**

410828928789000020852000000000002



**EAST BAY MUNICIPAL UTILITY DISTRICT**

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DATE: October 4, 2018

MEMO TO: Board of Directors

FROM: Alexander R. Coate, General Manager

SUBJECT: California Water Agency Earthquake Property Insurance Policies

**INTRODUCTION**

During the September 25, 2018 FY19 Insurance Summary update to the Finance/Administration Committee meeting, a question was raised regarding the availability of earthquake property insurance for large public utilities. The District's current property insurance policy provides a limit of \$200 million per occurrence with a \$500,000 deductible at a cost of \$666,500 per year. This policy also includes a \$25 million annual aggregate sublimit for flood coverage, with a separate \$10 million sublimit for floods in Special Flood Hazard Areas with a minimum \$1.5 million deductible per occurrence. This policy does not include coverage for earthquake-related damages. The Committee asked staff to research the availability and utilization of earthquake property insurance for large California public water utilities.

**DISCUSSION**

At the September 25 meeting, staff reported that the District's insurance broker was unable to find reasonably priced earthquake insurance that would provide substantial coverage from earthquake damage. Coverage currently available on the market provides \$10 million in coverage with a five percent deductible at a cost of \$860,000. Based on this pricing earthquake property insurance is not justified for the District at this time. The Committee asked staff to survey other large public water agencies regarding their earthquake insurance coverage. The Committee also requested staff to ask the Association of California Water Agencies Joint Powers Insurance Authority (ACWA/JPIA) whether they have a pooled earthquake solution or have explored forming a self-insured risk property pool with other public water agencies specifically for earthquake damage.

Staff contacted members of California Urban Water Agencies (CUWA) to see if they have earthquake property insurance. As of October 4<sup>th</sup>, 8 of the 10 members, not including EBMUD, have reported they do not have earthquake property insurance. Staff also contacted ACWA/JPIA about earthquake insurance. ACWA/JPIA does not have a risk pool for earthquake insurance; however, they do provide a group purchase program for earthquake insurance for eight member agencies. The group purchase program does not cover underground facilities or dams and the coverage limit is \$25 million with a deductible of five percent. One CUWA member, San Diego, reported that they have earthquake coverage for certain water facilities through a risk pool covering various city assets through the CSAC Excess Insurance Authority (CSAC EIA) that is

similar to the ACWA/JPIA group purchase program. Pooled risk programs have been reviewed in the past, but have not been proven to be beneficial to the District. Based on this information, the ACWA/JPIA group purchase program and the CSAC EIA plan would not be cost effective policies for the District's exposure because the exclusions are extensive, the deductibles are high, and the coverages are low. The District's past and current practice has been to use its financial resources to make strategic infrastructure investments to strengthen the resiliency of the water system rather than purchase such insurance.

## **NEXT STEPS**

Information on the District's financial capacity to handle future risks, such as droughts, earthquakes and other unanticipated events, will be provided as a part of the FY20-21 Budget Workshop process.

ARC:SDS:RL



2018 CAP Applications					
Month	Total Application Received	First Time CAP Enrollment	CAP Renewal	Total Accepted	Income Ineligible
Jan	313	177	128	305	8
Feb	319	153	151	304	15
Mar	324	134	183	317	7
Apr	385	199	167	366	19
May	358	192	149	341	17
Jun	361	179	157	336	25
Jul	389	204	158	362	27
Aug	411	216	174	390	21
Sep	268	137	116	253	15
Oct	352	196	145	341	11
Nov	268	118	142	260	8
Dec	290	140	135	275	15
Totals	4038	2045	1805	3850	188

2017 CAP Applications					
Month	Total Application Received	First Time CAP Enrollment	CAP Renewal	Total Accepted	Income Ineligible
Jan	275	131	134	265	10
Feb	280	149	114	263	17
Mar	403	170	220	390	13
Apr	324	144	164	308	16
May	319	155	146	301	18
Jun	358	180	158	338	20
Jul	294	150	127	277	17
Aug	395	204	170	374	21
Sep	311	143	148	291	20
Oct	351	170	169	339	12
Nov	276	132	123	255	21
Dec	262	121	118	239	23
Totals	3848	1849	1791	3640	208

**Note :** Incomplete CAP applications are excluded from the total received. Incomplete applications are typically processed when they are resubmitted with the required information.




**EAST BAY MUNICIPAL UTILITY DISTRICT**

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DATE: January 2, 2018

MEMO TO: Alexander R. Coate, General Manager

FROM: Barry N. Gardin, Internal Auditor Supervisor 

SUBJECT: CAP Program

**Background**

The October 2012 Internal Audit Report summarizing the results of the review of the Customer Assistance Program (CAP) noted the discrepancy between the District's methodology for determining customer eligibility for CAP and the methodology used by PG&E to establish eligibility for its program to provide energy rate relief for low income customers (CARE - California Alternate Rate for Energy). This distinction was of note because one of the criteria used by the District to enable customers to participate in the CAP program was participation in the PG&E CARE program.

The District's methodology for determining eligibility for the CAP program includes reviewing supporting documents including paystubs, child or spousal support payments, pension statements, disability payments and other documents to confirm that program participants meet income eligibility requirements. Discussion with PG&E staff and review of their program materials revealed, currently as at the time of our initial review, eligibility to participate in the CARE program only requires attestation by the customer that they meet low income criteria and the acknowledgment that they may be required to provide documented verification of eligibility at a later date.

Due to the inconsistency in the methodologies used to determine eligibility, Internal Audit recommended that use of CARE participation to establish CAP program eligibility be reconsidered. Subsequently the District discontinued using CARE participation as one of the criteria for eligibility in the CAP program. The Board of Directors has expressed interest in reconsidering use of CARE participation as criteria for CAP eligibility and requested information regarding the frequency which PG&E customers participating in CARE are subsequently deemed ineligible.

**Objective**

Internal Audit was asked to obtain an understanding of the follow up methodology used by PG&E to verify eligibility for the CARE program and provide the results of their most recent verification efforts. A description of PG&E's verification methodology and the results of their 2016 verification efforts was obtained from the Supervisor of the PG&E CARE program.

Following is a description of PG&E's follow up methodology and a summary of their 2016 verification effort.

## **Discussion**

PG&E deploys two methods to select customers to confirm eligibility for the CARE program.

Under the first method each year two to three percent of participating customers are randomly selected for confirmation. CARE customers are provided with a letter (Exhibit A) asking them to complete the attached income verification request (Exhibit B) and provide income related supporting documents for each member of the household. The supporting documents include pay stubs, bank statements, settlement documents, IRS forms, or employer letters (with contact information). Customers are given 45 days to respond or they are automatically removed from the CARE program.

Under the second method the eligibility of all (100 percent) CARE program customers whose consumption level exceeds 400 percent of the baseline are contacted for confirmation. These customers are provided with a letter (Exhibit C) instructing them to complete an income verification request (Exhibit D) which requires IRS statements (only) in order to confirm eligibility.

## **Results**

A total of 80,566 (six percent) of the 1,423,324 PG&E customers enrolled in the CARE program in 2016 were selected for post enrollment verification. This included 41,629 randomly selected enrollees and 38,937 high usage customers. In 2016, 70,209 (80 percent of those selected) were removed as a result of failing to respond to the information request or failing to meet program eligibility criteria. Specifically, 32,069 (77 percent) of the 41,629 randomly selected enrollees were removed and 38,140 (98 percent) of the 38,937 high usage customers were removed. Of the 32,069 randomly selected enrollees who were removed 29,962 failed to respond to the information requests while 2,107 were found not to have met the eligibility criteria. Of the 38,140 high usage enrollees who were removed 37,107 failed to respond to the information request and 1,033 did not meet the eligibility criteria. A summary of these results is attached (Exhibit E).

BG:kf

Attachments

cc: Sophia D. Skoda  
Sherri A. Hong



PG&E CARE Program  
P.O. Box 7979  
San Francisco, CA 94120-7979

## EXHIBIT A

Month 00, 20XX

«Customer Name»  
«Customer Name2»  
«Mailing Address2»  
«Mailing City, State Zip»

**URGENT REPLY NEEDED**  
**Proof of household income**  
**verification is required to continue**  
**your CARE Program enrollment.**

RE: Account number <account number>

Dear «Customer Name»:

As a member of the California Alternate Rates for Energy (CARE) Program, you are currently receiving a monthly discount of at least 20 percent or more on your energy bill. Your household has been selected to participate in the CARE Program post-enrollment verification process to verify your household eligibility. Eligibility for this program is based on total income of everyone living in the home OR participation in a qualifying public assistance program.

If you would like to continue receiving the monthly CARE Program discount, you must provide the following documentation:

- Completed CARE Program Post-Enrollment Verification Request Form (See form on back.)<sup>†</sup>
- Most recent copies of documents for every household member receiving income or public assistance. (See income document guide for acceptable forms of verification.)

The required documents must be received by **Month xxx, 20xx**, OR the CARE Program discount will be removed from your account.

Log in to [pge.com](http://pge.com) for tools and tips to help you manage your monthly energy usage.

Feel free to contact us with any questions at **1-866-743-5832** or email [careprogram@pge.com](mailto:careprogram@pge.com).

Sincerely,

Your partners at PG&E

<sup>†</sup> For large print in English or versions en español, sa Tagalog, 中文, Việt, 한국어, Hmong or Россия, visit [pge.com/carepev](http://pge.com/carepev) under "Additional Resources."



Customer Name		
PG&E Account Number		
Address	City	Zip
Email (optional)	Phone	
By entering your email address, you are authorizing PG&E to send you information from time to time regarding your PG&E utility service and PG&E programs and services that may be available to you.		

**URGENT REPLY NEEDED**  
Proof of household income verification is required.

## EXHIBIT B

# California Alternate Rates for Energy (CARE) Program Post-Enrollment Verification Request Form

### Instructions to complete this form:

- You must provide proof that you qualify for this program.** Attach copies of document(s) for every household member receiving income or public assistance. **See attached document guides for acceptable forms of verification.**
- Submit your completed form and copies of acceptable document(s) using one of the following:
 

<b>Mail</b> (envelope provided): <b>CARE Program</b> P.O. Box 7979 San Francisco, CA 94120-7979	<b>Email:</b> <a href="mailto:careprogram@pge.com">careprogram@pge.com</a>	<b>Fax:</b> <b>1-877-302-7563</b>
--	---	--------------------------------------
- Please list names below of every household member receiving income or public assistance (include yourself, adults, children), and indicate the source of income.

Name of each household member (including you) List any additional members on a separate piece of paper.	Source of Income		
	Income OR Public Assistance	Neither	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Number of people living in your household: Adults \_\_\_\_\_ Children (under 18) \_\_\_\_\_ Total \_\_\_\_\_

**Declaration:** By signing this declaration, I certify that the information I have provided in this application is true and correct. I acknowledge that I have read and understood the contents of this application. I also agree to follow the terms and conditions of the CARE or the FERA Program.

Signature \_\_\_\_\_

Date \_\_\_\_\_

☐

Check only if you no longer qualify or do not want to participate in the CARE Program, and sign here. \_\_\_\_\_



PG&E CARE Program  
P.O. Box 7979  
San Francisco, CA 94120-7979

## EXHIBIT C

Month 00, 2016

**URGENT REPLY NEEDED**  
**Proof of household income**  
**verification is required.**

«Customer Name»  
«Customer Name2»  
«Mailing Address2»  
«Mailing City, State Zip»

RE: Account number <account number>

Dear «Customer Name»:

As a member of the California Alternate Rates for Energy (CARE) Program, you are currently receiving a monthly discount of at least 20 percent or more on your energy bill.

The California Public Utilities Commission (CPUC) requires additional documentation from customers with electric usage above 400 percent of their baseline allowance in any monthly billing cycle. We are contacting you because last month your household's electric usage exceeded 400 percent of your allowance.\* As a result you should have seen a High Usage Surcharge on your last energy statement. Additionally, it is now necessary for you to complete the CARE Program High Usage verification process.

**To continue receiving your CARE Program discount, you must provide the following documentation for all adults in the household within 45 days from the date of this letter:**

- 1. Tax Return Transcript or Verification of Non-Filing from the IRS**
- 2. CARE Program High Usage Form** (Complete the enclosed form.)

We have detailed what you need to submit to us on the reverse side of this letter. In addition, we recommend that you request your documents from the IRS today, as it can take over 10 business days for documents to be processed.

If you depend on life-support or other equipment due to medical needs, you may be eligible for additional energy at the lowest price through the Medical Baseline Program. Learn more at [pge.com/medicalbaseline](http://pge.com/medicalbaseline) or call **1-800-743-5000** for assistance.

Log in to [pge.com](http://pge.com) for tools and tips to help you manage your monthly energy usage. You may also refer to the last page in this packet for a list of energy saving tips.

Feel free to contact us with any questions at **1-866-743-5832** or email [careprogram@pge.com](mailto:careprogram@pge.com).

Sincerely,  
Your partners at PG&E

For large print in English or versions en español, sa Tagalog, 中文, Việt, 한국어, Hmong or Россия, visit [pge.com/carepev](http://pge.com/carepev) under "Additional Resources."

\*\*Allowance" refers to Tier 1 or baseline allowance, which is the amount of energy provided to residential electric and natural gas customers, at the lowest cost, for basic energy needs. Your allowance varies by season, climate zone and heat source. Your baseline information is located in the "Charges" section on page 3 of your PG&E bill.

"PG&E" refers to Pacific Gas and Electric Company, a subsidiary of PG&E Corporation. ©2017 Pacific Gas and Electric Company. All rights reserved. The Energy Savings Assistance Program from Pacific Gas and Electric Company is available to selected, income-qualified customers. These offerings are funded by California utility customers and are administered by PG&E under the auspices of the California Public Utilities Commission. PG&E prints its materials with soy-based inks ♻️ on recycled paper. ♻️

February 2017 CCA-0217-7615



PG&E CARE Program  
P.O. Box 7979  
San Francisco, CA 94120-7979

## EXHIBIT D

Customer Name		
Address	City	Zip
Account Number [listed at the top of the letter]		
Email (optional)	Phone	

By entering your email address, you are authorizing PG&E to send you information from time to time regarding your PG&E utility service and PG&E programs and services that may be available to you.

# California Alternate Rates for Energy (CARE) Program High Usage Form

## 2A High Usage Verification

Name of each adult household member (including you)*		Filed Taxes
		<input type="checkbox"/> Yes <input type="checkbox"/> No
		<input type="checkbox"/> Yes <input type="checkbox"/> No
		<input type="checkbox"/> Yes <input type="checkbox"/> No
		<input type="checkbox"/> Yes <input type="checkbox"/> No
		<input type="checkbox"/> Yes <input type="checkbox"/> No
		<input type="checkbox"/> Yes <input type="checkbox"/> No
		<input type="checkbox"/> Yes <input type="checkbox"/> No
		<input type="checkbox"/> Yes <input type="checkbox"/> No
		<input type="checkbox"/> Yes <input type="checkbox"/> No
		<input type="checkbox"/> Yes <input type="checkbox"/> No
		<input type="checkbox"/> Yes <input type="checkbox"/> No
		<input type="checkbox"/> Yes <input type="checkbox"/> No
Number of people living in your household: Adults _____ Children (under 18) _____		<b>Yes = IRS Transcript</b> <b>No = Verification of Non-Filing</b>
<b>Declaration:</b> I acknowledge that I have read and understood the contents of this application and will have the opportunity to ask questions at any time. I also agree to the following program terms and conditions in order to remain eligible for the CARE Program. I will notify PG&E if my household is no longer eligible for the CARE Program discount. I understand I may be required to provide proof of household income and also to participate in the Energy Savings Assistance Program. I will allow PG&E to share my information with municipal, state or federal agencies, and/or other utilities or their agents, for the sole purpose of facilitating enrollment in their assistance programs. I will pay back the discount if any of the information provided above is untrue. The information I have provided here is true and correct.		
Signature _____		Date _____
<input type="checkbox"/> Check only if you no longer qualify or do not want to participate in the CARE Program, and sign here. _____		

\*List any additional members on a separate piece of paper.

## 2B Energy Savings Assistance Program Participation

By submitting the signed CARE High Usage Form you are agreeing to fulfill your participation in the Energy Savings Assistance Program. The Energy Savings Assistance Program provides energy-efficient home improvements and appliances at no cost to customers who qualify for the CARE Program and rent or own a home that is at least five years old. Completion of the Energy Savings Assistance Program is necessary to remain in the CARE Program.

To immediately get started, enroll at [pge.com/energysavings](http://pge.com/energysavings) or call 1-800-989-9744.



# Pacific Gas and Electric Company

## EXHIBIT E

PY 2016 CARE Annual Report

CARE Table 3A

Post-Enrollment Verification Results (Model)

2016	Total CARE Households Enrolled	Households Requested to Verify	% of CARE Enrolled Requested to Verify	CARE Households De-Enrolled (Due to no response)	CARE Households De-Enrolled (Verified as Ineligible) <sup>1</sup>	Total Households De-Enrolled <sup>2</sup>	% De-enrolled through Post Enrollment Verification	% of Total CARE Households De-Enrolled
January	1,436,950	2,654	0.18%	1,731	173	1,904	71.74%	0.13%
February	1,443,039	2,290	0.16%	1,541	114	1,655	72.27%	0.11%
March	1,439,687	4,349	0.30%	2,867	347	3,214	73.90%	0.22%
April	1,430,568	5,380	0.38%	3,574	366	3,940	73.23%	0.28%
May	1,426,248	0	0.00%	0	0	0	n/a	0.00%
June	1,422,512	0	0.00%	0	0	0	n/a	0.00%
July	1,420,152	4,445	0.31%	3,230	234	3,464	77.93%	0.24%
August	1,423,140	4,084	0.29%	3,347	143	3,490	85.46%	0.25%
September	1,419,417	2,128	0.15%	1,500	96	1,596	75.00%	0.11%
October	1,411,745	4,637	0.33%	3,440	222	3,662	78.97%	0.26%
November	1,411,983	5,511	0.39%	4,271	178	4,449	80.73%	0.32%
December	1,423,324	6,151	0.43%	4,461	234	4,695	76.33%	0.33%
YTD Total	1,423,324	41,629	2.92%	29,962	2,107	32,069	77.04%	2.25%

<sup>1</sup> Includes customers verified as over income or who requested to be de-enrolled.

<sup>2</sup> Verification results are tied to the month initiated.

CARE Table 3B

Post-Enrollment Verification Results (High Usage)

2016	Total CARE Households Enrolled	Households Requested to Verify	% of CARE Enrolled Requested to Verify	CARE Households De-Enrolled (Due to no response)	CARE Households De-Enrolled (Verified as Ineligible) <sup>1</sup>	Total Households De-Enrolled <sup>2</sup>	% De-enrolled through Post Enrollment Verification	% of Total CARE Households De-Enrolled
January	1,436,950	9,011	0.63%	8,695	240	8,935	99.16%	0.62%
February	1,443,039	8,845	0.61%	8,266	298	8,564	96.82%	0.59%
March	1,439,687	1,305	0.09%	1,237	56	1,293	99.08%	0.09%
April	1,430,568	878	0.06%	807	40	847	96.47%	0.06%
May	1,426,248	0	0.00%	0	0	0	n/a	0.00%
June	1,422,512	1,289	0.09%	1,254	25	1,279	99.22%	0.09%
July	1,420,152	3,242	0.23%	3,160	60	3,220	99.32%	0.23%
August	1,423,140	5,022	0.35%	4,724	146	4,870	96.97%	0.34%
September	1,419,417	5,214	0.37%	5,017	85	5,102	97.85%	0.36%
October	1,411,745	2,231	0.16%	2,120	53	2,173	97.40%	0.15%
November	1,411,983	1,068	0.08%	1,026	14	1,040	97.38%	0.07%
December	1,423,324	832	0.06%	801	16	817	98.20%	0.06%
YTD Total	1,423,324	38,937	2.74%	37,107	1,033	38,140	97.95%	2.68%

<sup>1</sup> Includes customers verified as over income, who declined to participate in ESA, or who requested to be de-enrolled.

<sup>2</sup> Verification results are tied to the month initiated.



## EAST BAY MUNICIPAL UTILITY DISTRICT

---

DATE: March 21, 2019

MEMO TO: Board of Directors

FROM: Alexander R. Coate, General Manager *ARC*

SUBJECT: FY20 and FY21 Recommended Revisions to the Water and Wastewater Systems' Schedule of Rates and Charges Subject to Proposition 218

### INTRODUCTION

The District updates the Water and Wastewater Systems' rates and charges biennially in conjunction with the development of its budget. The rates and charges are designed to cover the expenditures identified in the proposed FY20 and FY21 operating and capital budgets and to meet Board policy goals. After experiencing the financial and operational impacts of the 2014-2016 drought, water consumption over the past two years has stabilized to a level much lower than pre-drought water consumption. Significant beneficial water conservation was achieved during the drought; however, in combination with recent precipitation and resulting low outdoor water use, the District is experiencing water consumption only about 10 percent higher than drought levels which, in turn has been a driver for high water rate increases. While the District does not expect to experience further significant reductions in its water revenues, the District must address continued growth in capital reinvestment in aging infrastructure and accompanying increased costs to operate and maintain its Water and Wastewater Systems.

To determine the appropriate rates needed to recover these cost increases, the District engaged an independent rate consultant in 2015 and in 2019 to perform cost of service (COS) studies on the Water and Wastewater Systems. The District's 2015 COS study identified adjustments to individual water and wastewater rates and charges to conform to COS principles to allocate operating and capital costs to customers based on customer class use characteristics. The 2019 COS study identified additional updates to the Wastewater System rates and charges. The recommended adjustments to the Wastewater System rates and charges were presented to the Board at the January 22, 2019 Board workshop. The final written report for the 2019 COS study is under review and will be transmitted to the Board with the FY20 and FY21 biennial report and recommendation of the General Manager at the May 14, 2019 Board meeting. Based on the results of these studies, the District has determined that rate increases are necessary for the District's water and wastewater service charges to enable it to:

- meet current and long-term projected costs of operating and maintaining the Water System;
- fund capital infrastructure improvements needed to repair and update the District's aging Water and Wastewater Systems;
- maintain the financial stability of the utilities;
- comply with state-mandated regulatory requirements;



- meet and comply with annual debt service requirements; and
- avoid operational deficits and depletion of reserves.

The proposed water and wastewater rates and charges are recommended to be effective on bills issued on or after July 1, 2019 for FY20 and on or after July 1, 2020 for FY21.

The proposed FY20 and FY21 water rates, and resulting customer bills, will be lower than projected two years ago due to actual revenues in FY18 and projected revenues for FY19 exceeding budgeted amounts, which reduced the amount of debt issued to fund the capital program, and higher non-rate revenues in FY20 and FY21. Following the most recent drought, the average residential water user now consumes only 8 hundred cubic feet (CCF) per month (about 200 gallons per day) as compared to 10 CCF in FY13 and 12 CCF in FY07. The average 8 CCF user will see an increase of \$3.62 per month in FY20 and an increase of \$3.73 per month in FY21.

The overall wastewater rate increases for FY20 and FY21 will be exactly as previously projected for the Wastewater System, but individual components of the wastewater rates will be adjusted to reflect the recommendations in the 2019 COS study. The average single family residential bill for wastewater treatment based on the average use of 6 CCF will increase by \$0.20 per month in FY20 and \$0.87 per month in FY21. Wastewater customers also pay a Wet Weather Facilities Charge collected on the property tax bill. Depending on lot size, in FY20 this charge will increase between \$7.50 to \$26.76 per year, and in FY21 between \$4.46 to \$15.90 per year.

The recommendations in this memorandum cover the water and wastewater charges subject to California Constitution article XIII D, section 6 (commonly referred to as Proposition 218). In compliance with Proposition 218, which established specific rules for implementing new or adjusting existing charges, the District will hold a public hearing on June 11, 2019 to consider the adoption of the proposed charges, and at least 45 days prior to the scheduled public hearing, mail notices to the owners of record of parcels upon which the proposed charges will be imposed and tenants directly liable for the payment of the proposed charges (i.e., "customers" who are not property owners).

Any owner of record and any customer may submit a written protest to the proposed rates and charges increases; provided, however, only one written protest will be counted per identified parcel. Each protest must: (1) be in writing; (2) state that the identified property owner or customer is in opposition to the proposed increases to the rates and charges; (3) provide the location of the identified parcel by assessor's parcel number or street address; and (4) include the original signature of the property owner or customer submitting the protest. Written protests against the proposed increases may be personally delivered to the District, submitted at the hearing, or mailed to the District. To be tabulated, however, any written notice must be received by the District prior to the close of the public hearing. If a majority of the affected parcel owners or customers submit written protests, the proposed increases may not be imposed. A draft copy of the Proposition 218 notice for the recommended increases will be provided for Board review at the March 26, 2019 Budget Workshop.

Fees not subject to Proposition 218, including capacity charges, recreation fees, installation charges, and other one-time fees and charges, will also be included in the Biennial Report and Recommendation of the General Manager Fiscal Years 2020 & 2021 that will be presented at the May 14, 2019 Board meeting.

## RECOMMENDATIONS

Recommended changes to Water and Wastewater Systems rates and charges are:

### *Water System rates:*

- Increase water rates and charges (meter, volume, elevation surcharge, nonpotable/recycled water, and private fire service) 6.5 percent overall for FY20 and 6.25 percent overall for FY21. These proposed rate increases support the District's proposed FY20 and FY21 operating and capital expenses and meet Board policy goals.
- The impact of the combined FY20 and FY21 water rate increases to the average single family residential customer is an increase of \$7.35 per month or about 13.1 percent compared to the current FY19 bill.

### *Wastewater System rates:*

- Modify the wastewater rates for FY20 to include the COS study adjustments which result in some components of the wastewater treatment rates and charges decreasing and others increasing. The Wet Weather Facilities Charge will increase by 7.2 percent. Overall the FY20 proposed rates will generate 4 percent more revenue for the District in FY20 than the current FY19 rates.
- Increase the FY20 proposed wastewater treatment rates and charges (service, volume, and strength) and the Wet Weather Facilities Charge 4 percent overall for FY21. The FY20 and FY21 wastewater rate increases support the District's proposed FY20 and FY21 operating and capital expenses and meets Board policy goals.
- For the wastewater treatment charges collected on the EBMUD water bill, the impact of the combined FY20 and FY21 wastewater rate increases to the average single family residential customer is an increase of \$1.07 per month or about 4.9 percent compared to the current FY19 bill.



## DISCUSSION

### Water Rates and Charges

Increase Water System rates and charges by 6.5 percent in FY20 and 6.25 percent in FY21 to support revenue requirements – Revenue from water rates and charges needs to increase by 6.5 percent overall in FY20 and 6.25 percent in FY21 to cover the expenditures identified in the proposed FY20 and FY21 operating and capital budgets, and to meet Board policy goals. The FY20 and FY21 proposed rate increases are based on assumptions of water sales of 141 million gallons per day (MGD) for FY20 and a slight increase to 143 MGD for FY21. The assumption of water sales for FY20 of 141 MGD is the same as the budgeted water sales for FY19.

The details of the FY20 and FY21 budget objectives, operating budget, capital expenses, and debt expenses are contained in the FY20 and FY21 Biennial Budget and Capital Project Summaries. The proposed operating and capital budgets contribute to the increased FY20 and FY21 water rates and charges in roughly the following proportions:

- Capital – increases in rate-funded capital and debt service drive approximately 65 percent of the additional rate revenue required in FY20 and FY21.
- Operations – additional funded positions, increases in labor and benefits, and increases in non-labor expenses drive approximately 35 percent of the additional rate revenue required in FY20 and FY21.

Table 1 shows the calculation of the rate adjustment required over the two-year period between FY19 and FY21. It starts with the operating, debt service and capital cash flow expense identified in the multi-year budget and nets out other revenue sources which include bond proceeds, property taxes, capacity charges and use of reserves to pay for capital. Comparing the FY21 revenue requirement with estimated revenues under existing rates, the table identifies a revenue deficiency of \$65.8 million, and a necessary rate revenue adjustment of 12.75 percent over the period – 6.5 percent (FY20) and 6.25 percent (FY21).

**Table 1 - Revenue Shortfalls (In Million\$) Addressed Through Proposed Rate Increase**

	FY19	FY21	2-Yr Δ
<b>Revenue Requirement</b>			
+ O&M expense	\$292.5	\$315.4	7.8%
+ Debt service expense	210.0	217.7	3.7%
+ Capital expense	269.8	385.5	42.9%
Total expenses =	772.3	918.6	18.9%
- Other revenues	-264.8	-336.1	26.9%
Revenue requirement =	\$507.5	\$582.5	14.8%
<b>Revenue Adjustment</b>			
+ Revenue requirement		\$582.5	
- Revenue from existing rates		-516.7	
Difference =		\$65.8	
<b>Total Rate Revenue Requirement Adjustment</b>		<b>12.75%</b>	

### Wastewater Rates and Charges

Increase Wastewater System rates and charges by 4.0 percent in FY20 and 4.0 percent in FY21 to support revenue requirements – Revenue from wastewater rates and charges needs to increase by 4.0 percent overall in FY20 and 4.0 percent in FY21 to cover the expenditures identified in the proposed FY20 and FY21 operating and capital budgets, and to meet Board policy goals. The proposed operating and capital budgets combined with the reduced billed water use increase the District's revenue requirements and contribute to the FY20 and FY21 wastewater rates and charges increases in roughly the following proportions:

- Operations – increase in non-labor costs and increase in labor and benefits drive approximately 65 percent of the additional rate revenue required in FY20 and FY21.
- Capital – increases in rate-funded capital and debt service drive approximately 35 percent of the additional rate revenue required in FY20 and FY21.

Table 2 shows the calculation of the rate adjustment required over the two-year period between FY19 and FY21. It starts with the operating, debt service and capital cash flow expense identified in the multi-year budget and nets out other revenue sources which include bond proceeds, property taxes, Resource Recovery revenues, capacity charges and the use of reserves to pay for capital. Comparing the FY21 revenue requirement with estimated revenues under existing rates, the table identifies a revenue deficiency of \$8.1 million, and a necessary rate revenue requirement adjustment of 8 percent over the period – 4 percent (FY20) and 4 percent (FY21).

**Table 2 - Revenue Shortfalls (In Million \$) Addressed Through Proposed Rate Increases**

	FY19	FY21	2-Yr Δ
<b>Revenue Requirement</b>			
+ O&M expense	\$73.1	\$78.6	7.5%
+ Debt service expense	31.9	29.8	-6.6%
+ Capital expense	39.6	46.0	16.2%
Total expenses =	144.6	154.4	6.8%
- Other revenues	-44.0	-45.0	2.3%
Revenue requirement =	\$100.6	\$109.4	8.7%
<b>Revenue Adjustment</b>			
+ Revenue requirement		\$109.4	
- Revenue from existing rates		-101.3	
Difference =		\$8.1	
<b>Total Rate Revenue Requirement Adjustment</b>		<b>8%</b>	

### **FY20 and FY21 Revenue Requirements and Proposed Rates**

State law and District policy both mandate public utility rates and charges to be based on COS. The COS study allocates operating and capital costs to customer classes based on both customer class usage characteristics and facility design and operations. This nexus between usage and cost forms the financial and legal basis for setting utility rates and charges. The District's most recent COS studies were completed in 2019 for the Wastewater System and 2015 for the Water System.

The proposed FY20 and FY21 rates were developed using the rate models from these COS studies and the District's projected rate revenue requirement for FY20 and FY21.

Table 3 shows the revenue requirement for FY20 and FY21 as calculated based on the proposed FY20 and FY21 budgets for the Water System. Based on an updated projection of water sales for FY20 and FY21, the current FY19 water service charges need to be increased by 6.5 percent in FY20 and 6.25 percent in FY21 to meet the rate revenue requirements.



**Table 3 - Water System Revenue Requirement for FY20 and FY21**

	Operating	FY20 Capital	Total	Operating	FY21 Capital	Total
<b>Revenue Requirements</b>						
Operating - O&M Expenses	299,300,000		\$299,300,000	315,400,000		\$315,400,000
Capital - Debt Service		208,200,000	\$208,200,000		217,700,000	\$217,700,000
Capital - Expenses		337,700,000	\$337,700,000		385,500,000	\$385,500,000
<b>Total Revenue Requirements</b>	<b>\$299,300,000</b>	<b>\$545,900,000</b>	<b>\$845,200,000</b>	<b>\$315,400,000</b>	<b>\$603,200,000</b>	<b>\$918,600,000</b>
<b>Revenue Offsets</b>						
Property Taxes		35,000,000	\$35,000,000		35,800,000	\$35,800,000
Power	5,000,000		\$5,000,000	5,000,000		\$5,000,000
Interest	9,300,000		\$9,300,000	9,600,000		\$9,600,000
SCC Revenue		40,000,000	\$40,000,000		40,000,000	\$40,000,000
Operating Reimbursement	12,300,000		\$12,300,000	12,600,000		\$12,600,000
RARE Reimbursement	18,200,000		\$18,200,000	18,400,000		\$18,400,000
All Other		-	\$0		-	\$0
Transfer (to)/from Rate Stabilization Reserve	\$0		\$0	\$0	-500,000	(\$5,000,000)
<b>Total Revenue Offsets</b>	<b>\$44,800,000</b>	<b>\$75,000,000</b>	<b>\$119,800,000</b>	<b>\$45,600,000</b>	<b>\$70,800,000</b>	<b>\$116,400,000</b>
<b>Adjustments</b>						
Transfer of Cash for Capital from Other Funds	\$0	(181,900,000)	(\$181,900,000)	\$0	(219,700,000)	(\$219,700,000)
<b>Total Adjustments</b>	<b>\$0</b>	<b>(\$181,900,000)</b>	<b>(\$181,900,000)</b>	<b>\$0</b>	<b>(\$219,700,000)</b>	<b>(\$219,700,000)</b>
<b>Cost of Service to be Recovered from Rates</b>	<b>\$254,500,000</b>	<b>\$289,000,000</b>	<b>\$543,500,000</b>	<b>\$269,800,000</b>	<b>\$312,700,000</b>	<b>\$582,500,000</b>

Table 4 shows the revenue requirement for FY20 and FY21 based on the proposed FY20 and FY21 budgets for the Wastewater System. Based on an updated projection of treatment revenues for FY20 and FY21, FY19 wastewater user charges adjusted for the COS recommendations, need to be increased by 4 percent in FY20 and 4 percent in FY21 to meet the rate revenue requirements.

**Table 4 - Wastewater System Revenue Requirement for FY20 and FY21**

	Operating	FY20 Capital	Total	Operating	FY21 Capital	Total
<b>Revenue Requirements</b>						
O&M Expenses	\$75,100,000		\$75,100,000	\$78,600,000		\$78,600,000
Capital - Debt Service		\$30,200,000	\$30,200,000		\$29,800,000	\$29,800,000
Capital - Expenses		\$48,500,000	\$48,500,000		\$46,000,000	\$46,000,000
<b>Total Revenue Requirements</b>	<b>\$75,100,000</b>	<b>\$78,700,000</b>	<b>\$153,800,000</b>	<b>\$78,600,000</b>	<b>\$75,800,000</b>	<b>\$154,400,000</b>
<b>Revenue Offsets</b>						
Resource Recovery	\$6,089,050	\$3,910,950	\$10,000,000	\$6,089,050	\$3,910,950	\$10,000,000
Property Taxes		\$5,400,000	\$5,400,000		\$5,600,000	\$5,600,000
Ad Valorem Bond Levy		\$0	\$0		\$0	\$0
Interest	\$2,400,000		\$2,400,000	\$2,100,000		\$2,100,000
Laboratory Services	\$4,400,000		\$4,400,000	\$4,500,000		\$4,500,000
Reimbursements	\$1,500,000		\$1,500,000	\$1,500,000		\$1,500,000
Permit Fees	\$1,600,000		\$1,600,000	\$1,600,000		\$1,600,000
Capacity Charges		\$4,000,000	\$4,000,000		\$4,000,000	\$4,000,000
All Other Revenue	\$2,200,000	\$3,500,000	\$5,700,000	\$2,200,000	\$3,500,000	\$5,700,000
Transfer (to)/from Rate Stabilization Reserve (RSR)	\$0		\$0	\$0		\$0
<b>Total Revenue Offsets</b>	<b>\$18,189,050</b>	<b>\$16,810,950</b>	<b>\$35,000,000</b>	<b>\$17,989,050</b>	<b>\$17,010,950</b>	<b>\$35,000,000</b>
<b>Adjustments</b>						
Transfer of Cash for Capital from Other Funds		(\$13,600,000)	(\$13,600,000)		(\$10,000,000)	(\$10,000,000)
<b>Total Adjustments</b>	<b>\$0</b>	<b>(\$13,600,000)</b>	<b>(\$13,600,000)</b>	<b>\$0</b>	<b>(\$10,000,000)</b>	<b>(\$10,000,000)</b>
<b>Cost of Service to be Recovered from Rates</b>	<b>\$56,910,950</b>	<b>\$48,289,050</b>	<b>\$105,200,000</b>	<b>\$60,610,950</b>	<b>\$48,789,050</b>	<b>\$109,400,000</b>

Based on the rate models from the District's COS studies, water service fees have five customer classes: single family residential, multi-family residential, non-residential, private fire customer, and nonpotable/recycled. Together, the rates for the components of the water fees are structured to proportionately recover the costs of providing water service among the various customer classes. The rates for EBMUD's water fees have five components: a Water Flow Charge, a Water Service Charge, an Elevation Surcharge, a Private Fire Service Charge, and a Drought Surcharge.

Based on the rate models from the District's COS studies, the wastewater service fees have three customer classes: residential, multi-family residential, and non-residential. Non-residential customers are further classified based on the type of business operated. Together, the rates for the components of the wastewater service fees are structured to proportionately recover the costs of providing wastewater services among the various customer classes. The rates for the wastewater fees have up to five components: a Treatment Service Charge, a Treatment Flow Charge, a Treatment Strength Charge, a Pollution Prevention Fee, and a Wet Weather Facilities Charge.

A draft Proposition 218 notice for FY20 and FY21 with each of the proposed rates will be presented to the Board at the March 26, 2019 budget workshop. Note that due to rounding of the individual rate components to the nearest whole cent, the actual rate increases and bill impacts may vary slightly from the overall FY20 and FY21 rate increases of 6.5 percent and 6.25 percent for water and 4.0 percent and 4.0 percent for wastewater. In addition, the wastewater fees for FY20 have been adjusted for the recommendations from the 2019 Wastewater System COS study. A summary of the proposed rates and the resulting customer impacts are presented below.

**Table 5 - Proposed Monthly Water Service Charges (Meter) - (\$/Meter Size)**

Monthly Meter Service Charges on Water Bill					
Meter Size (in inches)	FY19	FY20	Percent Change	FY21	Percent Change
5/8 or 3/4	\$24.63	\$26.23	6.5%	\$27.87	6.3%
1	\$37.20	\$39.62	6.5%	\$42.10	6.2%
1-1/2	\$68.65	\$73.11	6.5%	\$77.68	6.3%
2	\$106.36	\$113.27	6.5%	\$120.35	6.3%
3	\$206.96	\$220.41	6.5%	\$234.19	6.3%
4	\$320.13	\$340.94	6.5%	\$362.25	6.3%
6	\$634.43	\$675.67	6.5%	\$717.90	6.3%
8	\$1,011.64	\$1,077.40	6.5%	\$1,144.74	6.3%
10	\$1,451.69	\$1,546.05	6.5%	\$1,642.68	6.3%
12	\$2,017.52	\$2,148.66	6.5%	\$2,282.95	6.2%
14	\$2,583.30	\$2,751.21	6.5%	\$2,923.16	6.2%
16	\$3,274.84	\$3,487.70	6.5%	\$3,705.68	6.2%
18	\$3,966.36	\$4,224.17	6.5%	\$4,488.18	6.2%

**Table 6 - Proposed Monthly Private Fire Service Charges - (\$/Meter Size)**

Monthly Private Fire Service Charges on Water Bill					
Meter Size (in inches)	FY19	FY20	Percent Change	FY21	Percent Change
5/8 or 3/4	\$13.11	\$13.96	6.5%	\$14.83	6.2%
1	\$18.01	\$19.18	6.5%	\$20.38	6.3%
1-1/2	\$30.20	\$32.16	6.5%	\$34.17	6.3%
2	\$44.84	\$47.75	6.5%	\$50.73	6.2%
3	\$83.92	\$89.37	6.5%	\$94.96	6.3%
4	\$127.85	\$136.16	6.5%	\$144.67	6.3%
6	\$249.92	\$266.16	6.5%	\$282.80	6.3%
8	\$396.39	\$422.16	6.5%	\$448.55	6.3%
10	\$567.27	\$604.14	6.5%	\$641.90	6.3%
12	\$786.97	\$838.12	6.5%	\$890.50	6.2%
14	\$1,006.69	\$1,072.12	6.5%	\$1,139.13	6.3%
16	\$1,275.25	\$1,358.14	6.5%	\$1,443.02	6.2%
18	\$1,543.78	\$1,644.13	6.5%	\$1,746.89	6.3%



**Table 7 - Proposed Water Flow Charges and Elevation Charges - (\$/CCF)**

<b>Water Flow and Elevation Charges on Water Bill</b>					
<b>Flow Charges</b>	<b>FY19</b>	<b>FY20</b>	<b>Percent Change</b>	<b>FY21</b>	<b>Percent Change</b>
Single Family Residential					
Tier 1 up to 7 CCF	\$3.76	\$4.00	6.4%	\$4.25	6.25%
Tier 2 up to 16 CCF	\$5.17	\$5.51	6.6%	\$5.85	6.17%
Tier 3 over 16 CCF	\$6.83	\$7.27	6.4%	\$7.72	6.19%
Multi-Family Residential	\$5.31	\$5.66	6.6%	\$6.01	6.18%
All other accounts (commercial/industrial)	\$5.29	\$5.63	6.4%	\$5.98	6.22%
Nonpotable/Recycled Water	\$4.12	\$4.39	6.6%	\$4.66	6.15%
Elevation Surcharge* (\$/CCF)					
Pressure Zone 1	\$0.00	\$0.00	0.0%	\$0.00	0.0%
Pressure Zone 2	\$0.76	\$0.81	6.6%	\$0.86	6.17%
Pressure Zone 3	\$1.58	\$1.68	6.3%	\$1.79	6.55%

\*Elevation Surcharge is assessed to certain customers based on location. The Elevation Surcharge is applied to each unit of water delivered to properties in some pressure zones, and is calculated to recover the increased cost of power and facility costs required to pump water to locations 200 feet or more above sea level.

**Table 8 - Single Family Residential Customer Monthly Water Bill Impacts – Includes Proposed Water Service and Flow Charges**

<b>Single Family Residential Water Charges on Water Bill</b>								
	<b>Use (CCF)</b>	<b>FY19 Bill</b>	<b>FY20 Bill</b>	<b>Increase from FY19</b>	<b>Percent Change</b>	<b>FY21 Bill</b>	<b>Increase from FY20</b>	<b>Percent Change</b>
25 <sup>th</sup> Percentile	4	\$39.67	\$42.23	\$2.56	6.5%	\$44.87	\$2.64	6.25%
50 <sup>th</sup> Percentile (median use)	6	\$47.19	\$50.23	\$3.04	6.4%	\$53.37	\$3.14	6.25%
75 <sup>th</sup> Percentile	10	\$66.46	\$70.76	\$4.30	6.5%	\$75.17	\$4.41	6.23%
95 <sup>th</sup> Percentile	24	\$152.12	\$161.98	\$9.86	6.5%	\$172.03	\$10.05	6.20%
<b>Average Single Family Residential Use*</b>	<b>8</b>	<b>\$56.12</b>	<b>\$59.74</b>	<b>\$3.62</b>	<b>6.5%</b>	<b>\$63.47</b>	<b>\$3.73</b>	<b>6.24%</b>

\*8 CCF/month represents recent average single family residential use. Previous comparisons used 10 CCF/month, which represented historic average single family residential use prior to recent drought conditions.



**Table 9 - Other Customer Monthly Water Bill Impacts – Includes Proposed Water Service and Flow Charges**

Multi-Family Residential and Non-Residential Water Charges on Water Bill									
	Meter (Inches)	Use (CCF)	FY19 Bill	FY20 Bill	Increase from FY19	Percent Change	FY21 Bill	Increase from FY20	Percent Change
Multi-Family Residential 4 dwelling units	1	25	\$169.95	\$181.12	\$11.17	6.6%	\$192.35	\$11.23	6.20%
Multi-Family Residential 5+dwelling units	1	50	\$302.70	\$322.62	\$19.92	6.6%	\$342.60	\$19.98	6.19%
Commercial	1	50	\$301.70	\$321.12	\$19.42	6.4%	\$341.10	\$19.98	6.22%
Industrial	2	500	\$2,751.36	\$2,928.27	\$176.91	6.4%	\$3,110.35	\$182.08	6.22%

Table 10 shows the proposed wastewater treatment unit rates that are used to calculate the total wastewater flow and strength charges for each of the wastewater customer classes based on the specific characteristics of their wastewater discharge. For FY20, the wastewater strength charge for organics in the wastewater discharge will be based on Chemical Oxygen Demand rather than Chemical Oxygen Demand Filtered as recommended in the 2019 COS study.

**Table 10 - Proposed Wastewater Treatment Unit Rates**

Wastewater Treatment Unit Rates					
Unit Rates	FY19	FY20	Percent Change	FY21	Percent Change
Service Charge (\$/account)	\$6.12	\$7.02	14.7%	\$7.30	4.0%
Flow (\$/CCF)	\$1.196	\$1.266	5.9%	\$1.317	4.0%
Strength – COD (\$/pound)	N/A	\$0.129	N/A	\$0.134	3.9%
Strength – Total Suspended Solids (\$/pound)	\$0.517	\$0.530	2.5%	\$0.551	4.0%

Table 11 shows the proposed wastewater treatment charges for residential customers which are based on the unit rates in Table 10 and the number of dwelling units and monthly flow. Table 12 shows the proposed wastewater combined flow and strength charge per CCF for non-residential customers listed by business classification code (BCC) that is calculated from the unit rates in Table 10. Wastewater customers who have been issued strength permits for unique wastewater strength and flow are charged based on the unit rates in Table 10. Included in the monthly wastewater bill is the San Francisco Bay Pollution Prevention Fee that funds the Pollution Prevention Program that implements strategies to minimize and monitor pollutants from both residential and non-residential sources. The San Francisco Bay Pollution Prevention Fee will remain \$0.20 per month for residential customers and \$5.48 per month for non-residential customers as shown in Table 13.

**Table 11 - Proposed Monthly Single Family and Multi-Family\* Residential Wastewater Treatment Rates and Charges**

<b>Wastewater Treatment Rates &amp; Charges</b>					
<b>Unit Rates</b>	<b>FY19</b>	<b>FY20</b>	<b>Percent Change</b>	<b>FY21</b>	<b>Percent Change</b>
Service Charge (\$/account)	\$6.12	\$7.02	14.7%	\$7.30	4.0%
Flow (\$/CCF)	\$1.20	\$1.27	5.8%	\$1.32	3.9%
Strength – (\$ per dwelling unit)	\$8.43	\$7.31	-13.3%	\$7.60	4.0%

\*Multi-Family Residential is 2 to 4 dwelling units; all charges except the Treatment Service Charges are per dwelling unit.

**Table 12 - Proposed Wastewater Non Residential Flow and Strength Rates per CCF by Business Classification Code**

Business Classification Code		FY19 Current Rate per CCF	FY20 Proposed Rate per CCF	Change	FY21 Proposed Rate per CCF	Change
2010	Meat Products	\$7.85	\$8.90	13.4%	\$9.24	3.8%
2011	Slaughterhouses	7.92	8.50	7.3%	8.83	3.9%
2020	Dairy Product Processing	6.21	6.98	12.4%	7.25	3.9%
2030	Fruit and Vegetable Canning	5.04	5.61	11.3%	5.83	3.9%
2040	Grain Mills	5.18	5.58	7.7%	5.80	3.9%
2050	Bakeries (including Pastries)	8.82	9.65	9.4%	10.03	3.9%
2060	Sugar Processing	4.83	5.53	14.5%	5.74	3.8%
2077	Rendering Tallow	15.80	16.74	5.9%	17.40	3.9%
2080	Beverage Manufacturing & Bottling	3.74	4.19	12.0%	4.36	4.1%
2090	Specialty Foods Manufacturing	15.99	18.05	12.9%	18.75	3.9%
2600	Pulp and Paper Products	4.45	4.79	7.6%	4.98	4.0%
2810	Inorganic Chemicals Mfgr.	5.93	6.16	3.9%	6.40	3.9%
2820	Synthetic Material Manufacturing	1.36	1.44	5.9%	1.50	4.2%
2830	Drug Manufacturing	2.79	3.11	11.5%	3.23	3.9%
2840	Cleaning and Sanitation Products	5.64	6.30	11.7%	6.54	3.8%
2850	Paint Manufacturing	11.01	12.14	10.3%	12.61	3.9%
2893	Ink and Pigment Manufacturing	3.88	4.39	13.1%	4.56	3.9%
3110	Leather Tanning and Finishing	15.07	16.77	11.3%	17.43	3.9%
3200	Earthenware Manufacturing	3.24	3.40	4.9%	3.53	3.8%
3300	Primary Metals Manufacturing	2.56	2.69	5.1%	2.80	4.1%
3400	Metal Products Fabricating	1.47	1.57	6.8%	1.64	4.5%
3410	Drum and Barrel Manufacturing	15.21	17.08	12.3%	17.74	3.9%
3470	Metal Coating	1.60	1.71	6.9%	1.77	3.5%
4500	Air Transportation	2.07	2.25	8.7%	2.34	4.0%
4951	Groundwater Remediation	1.24	1.28	3.2%	1.34	4.7%
5812	Food Service Establishments	5.47	5.83	6.6%	6.06	3.9%
6513	Apartment Buildings (5 or more units)	2.73	2.83	3.7%	2.94	3.9%
7000	Hotels, Motels with Food Service	3.96	4.19	5.8%	4.36	4.1%
7210	Commercial Laundries	3.46	3.77	9.0%	3.92	4.0%
7215	Coin Operated Laundromats	2.60	2.83	8.8%	2.94	3.9%
7218	Industrial Laundries	9.55	10.73	12.4%	11.15	3.9%
7300	Laboratories	1.87	2.02	8.0%	2.11	4.5%
7542	Automobile Washing and Polishing	2.48	2.68	8.1%	2.79	4.1%
8060	Hospitals	2.42	2.57	6.2%	2.68	4.3%
8200	Schools	1.76	1.89	7.4%	1.97	4.2%
	All Other BCC (includes dischargers of only segregated domestic wastes from sanitary conveniences)	2.73	2.83	3.7%	2.94	3.9%



Business Classification Code		FY19 Current Rate per CCF	FY20 Proposed Rate per CCF	Change	FY21 Proposed Rate per CCF	Change
A	0-9% Food/91-100% Domestic	\$2.730	\$2.830	3.7%	\$2.940	3.9%
B	10-19% Food/81-90% Domestic	3.000	3.130	4.3%	3.252	3.9%
C	20-29% Food/71-80% Domestic	3.280	3.430	4.6%	3.564	3.9%
D	30-39% Food/61-70% Domestic	3.550	3.730	5.1%	3.876	3.9%
E	40-49% Food/51-60% Domestic	3.830	4.030	5.2%	4.188	3.9%
F	50-59% Food/41-50% Domestic	4.100	4.330	5.6%	4.500	3.9%
G	60-69% Food/31-40% Domestic	4.370	4.630	5.9%	4.812	3.9%
H	70-79% Food/21-30% Domestic	4.650	4.930	6.0%	5.124	3.9%
I	80-89% Food/11-20% Domestic	4.920	5.230	6.3%	5.436	3.9%
J	90-99% Food/1-10% Domestic	5.200	5.530	6.3%	5.748	3.9%
K	0-9% Bakery/91-100% Domestic	2.730	2.830	3.7%	2.940	3.9%
L	10-19% Bakery/81-90% Domestic	3.340	3.512	5.1%	3.649	3.9%
M	20-29% Bakery/71-80% Domestic	3.950	4.194	6.2%	4.358	3.9%
N	30-39% Bakery/61-70% Domestic	4.560	4.876	6.9%	5.067	3.9%
O	40-49% Bakery/51-60% Domestic	5.170	5.558	7.5%	5.776	3.9%
P	50-59% Bakery/41-50% Domestic	5.780	6.240	8.0%	6.485	3.9%
Q	60-69% Bakery/31-40% Domestic	6.380	6.922	8.5%	7.194	3.9%
R	70-79% Bakery/21-30% Domestic	6.990	7.604	8.8%	7.903	3.9%
S	80-89% Bakery/11-20% Domestic	7.600	8.286	9.0%	8.612	3.9%
T	90-99% Bakery/1-10% Domestic	8.210	8.968	9.2%	9.321	3.9%

**Table 13 – Monthly San Francisco Bay Pollution Prevention Fee**

Monthly San Francisco Bay Pollution Prevention Fee					
	FY19	FY20	Percent Change	FY21	Percent Change
Residential (\$ per dwelling unit)*	\$0.20	\$0.20	0.0%	\$0.20	0.0%
Non-residential (\$ per account)	\$5.48	\$5.48	0.0%	\$5.48	0.0%

\*SF Bay Pollution Prevention Fee for apartments (5 or more dwelling units) will remain \$1.00 per month for FY20 and FY21.



**Table 14 - Customer Monthly Wastewater Treatment Bill Impacts - Includes Service, Flow and Strength Charges and Pollution Prevention Fees**

Wastewater Charges on Water Bill									
	Meter (Inches)	Use (CCF)	FY19 Bill	FY20 Bill	Increase from FY19	Percent Change	FY21 Bill	Increase from FY20	Percent Change
Average Single Family Residential	5/8	6	\$21.95	\$22.15	\$0.20	0.9%	\$23.02	\$0.87	3.9%
Single Family Residential	5/8	9	\$25.55	\$25.96	\$0.41	1.6%	\$26.98	\$1.02	3.9%
Multi-Family Residential 4 dwelling units	1	25	\$70.64	\$68.81	(\$1.83)	-2.6%	\$71.50	\$2.69	3.9%
Multi-Family Residential 5+dwelling units	1	50	\$143.62	\$149.52	\$5.90	4.1%	\$155.30	\$5.78	3.9%
Commercial	1	50	\$148.10	\$154.00	\$5.90	4.0%	\$159.78	\$5.78	3.8%
Industrial	2	500	\$8,006.60	\$9,037.50	\$1,030.90	12.9%	\$9,387.78	\$350.28	3.9%

The Wet Weather Facilities Charge (WWFC) is a fixed charge that is imposed on the property itself. The WWFC funds the capital expenses for facilities required to handle the peak wet weather flows that enter the District's Wastewater System through the local wastewater collection systems and sewer connections. The amount of wet weather flows that enter the wastewater system is proportional to the size of the collection system needed to serve each property. For example, larger lots generally have more wet weather flows that could enter the wastewater system than smaller lots. For this reason, lot size is used as a proxy to estimate the size of the collection system to serve each property. Accordingly, the WWFC is structured into three generalized lot sizes (or bins): 0 to 5,000 square feet (sq ft), 5,001 to 10,000 sq ft, and over 10,001 sq ft. The WWFC is based on median lot size for each of these bins, regardless of whether a property is residential or non-residential.

The wet weather capital facilities are designed to meet the peak wet weather flows that are in excess of the normal wastewater discharges from wastewater customers. Because the WWFC is based on the size of the property and is unrelated to water or wastewater usage at the property, the District collects the WWFC on the property tax bill for all parcels that have connections to the local wastewater collection systems within the District's wastewater service area. The WWFC for public agencies that are exempt from property taxes is collected through the District's billing process.

The WWFC was reviewed as part of the 2019 COS study. With adjustment for the 2019 COS study and the proposed overall 4 percent FY20 wastewater rate increase, the WWFC will increase 7.2 percent in FY20 when compared to the FY19 charge. The proposed increase for FY21 is 4 percent.

**Table 15 - Proposed Annual Wet Weather Facilities Charge - (\$/Lot Size)**

Proposed Wet Weather Facilities Charge (\$/Lot Size)							
	FY19 Bill	FY20 Bill	Increase from FY19	Percent Change	FY21 Bill	Increase from FY20	Percent Change
Small Lot 0 - 5,000 sq. ft.	\$103.74	\$111.24	\$7.50	7.2%	\$115.70	\$4.46	4.0%
Medium Lot 5,001 – 10,000 sq. ft.	\$162.06	\$173.78	\$11.72	7.2%	\$180.74	\$6.96	4.0%
Large Lot >10,000 sq. ft.	\$370.44	\$397.20	\$26.76	7.2%	\$413.10	\$15.90	4.0%

### **Drought Rates**

The District does not anticipate a water shortage in FY20 or FY21 as a result of abundant storage due to recent storms and reduced customer demand. However, the District's schedule of drought rates will remain in effect for FY20 and FY21 as a contingency plan in the event of an unanticipated water shortage. In the FY16 and FY17 budget, the Board adopted a staged system of drought rates to recover water shortage-related costs and has maintained this rate schedule to be ready if needed.

The District's 2015 COS study developed drought surcharges of up to 8 percent, 20 percent and 25 percent on the volumetric charges during water shortage Stages 2, 3 and 4, respectively. Drought surcharges would be applicable to all potable water customer accounts only if the EBMUD Board of Directors declares a Stage 2, 3, or 4 water shortage based on factors such as system water storage and the need to purchase supplemental supplies of water to meet customer demand. The drought surcharges correspond to increasingly severe stages of water shortages and are charged on each unit of water used during the billing period. The surcharges are calculated to recover costs such as costs of providing supplemental water, costs of water shortage-related customer service, and loss of revenue, which increases with each water shortage stage. For example, under a Stage 4 water shortage, an average single family customer using 8 CCF per month would pay a drought surcharge of up to \$8.38 per month in FY20.

Prior to implementing the drought surcharges, EBMUD would update the drought related costs and develop and adopt surcharges consistent with the COS study, not to exceed the drought surcharge percentages listed above. The District's Proposition 218 notice will continue to include information regarding these surcharges so that they remain available to the Board to implement the next time the District is in a water shortage that requires reductions in water use by its customers.

### **Customer Bill Impact of Recent Rate Increases with Reduced Consumption**

Due to conservation efforts during the recent drought, the average single family residential (SFR) monthly water use has dropped from as high as 12 CCF per month in FY07 to 8 CCF per month in current projections, and the overall water sales have dropped by one third over the same time period.

Over the last 12 years the District has raised water rates on average 7.4 percent per year. The attachment shows that while rates have increased, conservation actions have reduced average water use for SFR customers and resulted in less impact on monthly bills. Over the last 12 years, the actual monthly water bill based on the average SFR customer water use increased just 4.8 percent per year. If the proposed FY20 and FY21 water rates are adopted, the monthly water bill using the average SFR customer water use will have increased 5 percent per year from FY07 to FY21.

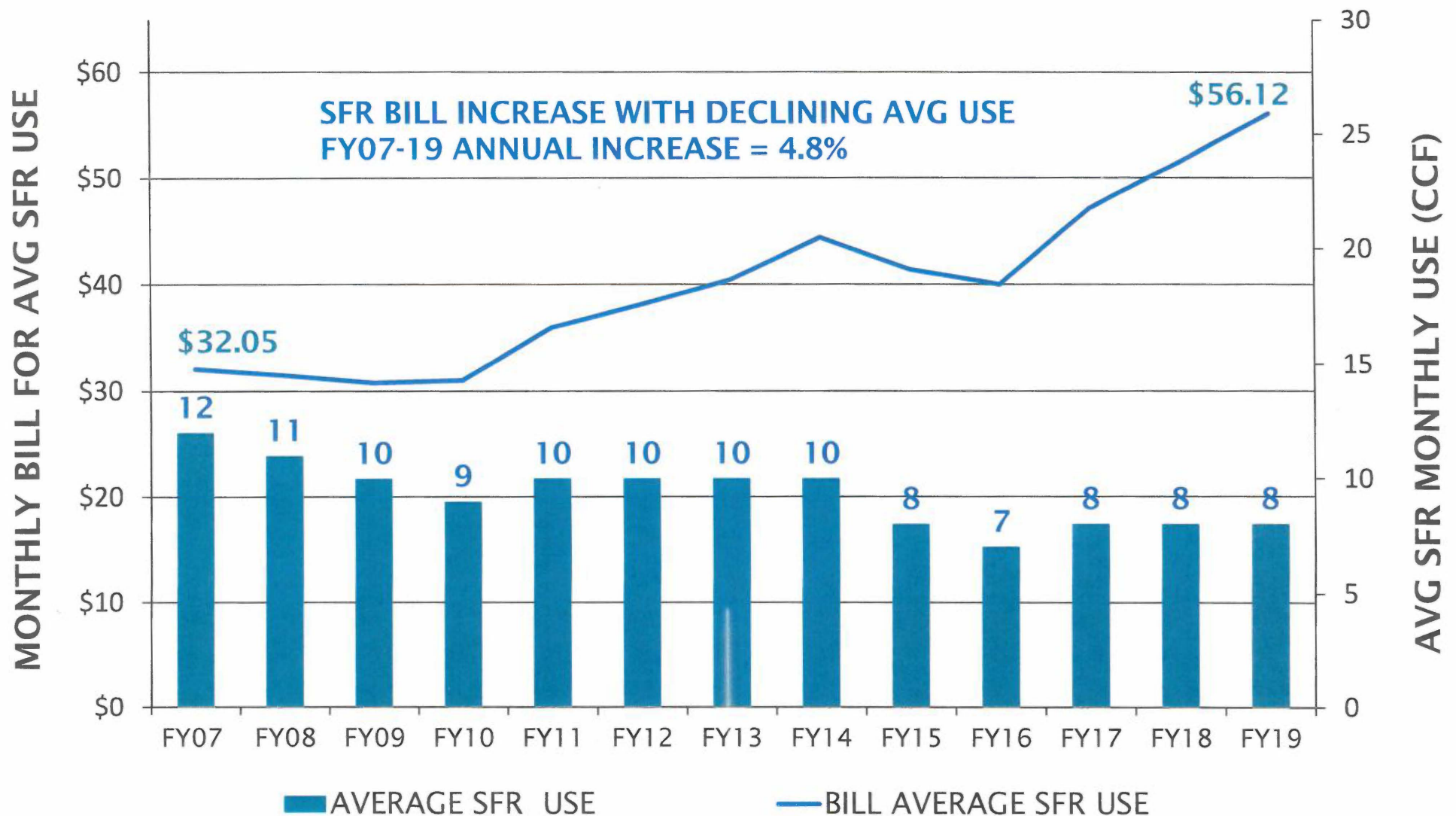
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Attachment





# Impact of Declining Average Water Use on SFR Bill







# Proposed Biennial Budget

*Fiscal Years 2020 & 2021*

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## ***District Overview***

### ***Water System Budget***

### ***Wastewater System Budget***



***East Bay Municipal Utility District***  
***Oakland, California***



# ***Fiscal Years 2020 & 2021***

## **Biennial Budget**

***Volume 1     District Overview  
                  Water System Budget  
                  Wastewater System Budget***

***Volume 2     Supplemental Material:  
                  Capital Project Summaries***

*Presented to the Board of Directors  
March 26, 2019*

***East Bay Municipal Utility District***



**EAST BAY MUNICIPAL UTILITY DISTRICT  
BIENNIAL BUDGET FY20 & FY21  
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**SUPPLEMENTAL VOLUME**

Capital Project Summaries

**Note:** Totals for charts and tables throughout the document may not sum due to rounding.

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March 21, 2019

Honorable Members of the Board of Directors:

I am pleased to present the water and wastewater budgets for Fiscal Years 2020 (FY20) and 2021 (FY21). This budget supports our mission to provide reliable, high quality water and wastewater services at fair and reasonable rates for the people of the East Bay.

The District has risen to a variety of challenges in our 96 years of operation. Over the last decade, we have weathered a nation-wide economic recession and recovery, and a severe drought followed closely by above average rainfall. In addition, customers have dramatically changed their water use habits with consumption decreasing by nearly 30 percent from approximately 200 million gallons per day (MGD) in 2004 to a projected 141 MGD this year. Challenges such as these require near-term response and long-term planning to safeguard financial stability and maintain a high level of customer service and water quality.

Our strategic plan guided the development of this biennial budget and the five-year capital improvement program. The priorities set in this budget are to continue investments in and maintenance of aging infrastructure, and provide for long-term financial stability. As we look forward, it is important to first reflect on major achievements.

- We continue to pilot new technologies and construction methods to increase the miles of distribution pipeline replaced to reduce leaks and increase reliability. In FY21, we plan to replace 20 miles of pipe which is double the annual amount replaced five years ago.
- Our efforts to protect the Mokelumne River salmon fishery through habitat enhancement and effective hatchery operations resulted in the best fish returns on record.
- We have completed 19 years of perfect permit compliance at the Main Wastewater Treatment Plant.
- We enhanced our training and operation practices to better manage wet weather flows, resulting in no violations from the wastewater Wet Weather Facilities.

Over the next two years, we will invest more than \$800 million to improve our aging water and wastewater infrastructure. Investments are also being made in our IT infrastructure to upgrade outdated financial and human resource systems. Essential to these investments is maintaining and attracting a robust workforce to ensure we can provide service 24/7. We will continue to implement partnerships to create a pipeline of diverse and qualified candidates for jobs that are difficult to fill. In 2019, we launched a Technical Trades Apprenticeship Program for machinists and mechanics. The next phase of the Program will be expanded to other hard to fill classifications.

The FY20 and FY21 water rates and customer bill impacts are lower than those projected two years ago. Customers continue to consume on average 8 centum cubic feet (CCF) per month (about 200 gallons per day) as compared to 10 CCF historically. The 8 CCF user will see an increase in their water bill of \$3.62 per month in FY20 and an increase of \$3.73 per month in FY21, based on the proposed rate increases of 6.5 percent in FY20 and 6.25 percent in FY21.

Almost half of our customers also receive wastewater services. The proposed wastewater rate increases to support the budget are 4 percent each year, exactly as projected, as the Wastewater System is less affected by reduced water consumption. In FY19, the District completed a cost of service study for the wastewater treatment rates and wet weather charges that resulted in slight adjustments to the charges. The average single family residential bill for wastewater treatment based on the average of 6 CCF will increase by \$0.20 per month in FY20 and \$0.87 per month in FY21. This reflects the proposed wastewater rate increase of 4 percent in FY20 and FY21, and adjustments from the cost of service study. Wastewater customers also pay an annual Wet Weather Facilities Charge collected on the property tax bill. The annual charge is based on lot size and will increase 7.2 percent in FY20 by \$7.50 for the smallest lots to \$26.76 for the largest lots as a result of the cost of service study combined with the 4 percent rate increase. In FY21, the charge will increase 4.0 percent ranging from \$4.46 to \$15.90 per year.

## **BUDGET HIGHLIGHTS**

The budget priorities for FY20 and FY21 emerged from a planning process that began with the adoption of the District's updated July 2018 Strategic Plan. The Strategic Plan outlines the goals, strategies, and objectives we will pursue to meet future challenges and fulfill the District's mission.

### ***Increase Investments in and Maintenance of Aging Infrastructure***

The District operates and maintains a vast network of pipelines, storage and treatment facilities to deliver water to customers and provide wastewater service. Reaching from the Sierra Nevada foothills to the San Francisco Bay, this network has an estimated replacement cost exceeding \$15 billion. Maintaining high-quality service requires ongoing reinvestment in reservoirs, aqueducts, pump stations, pipelines, sewer interceptors, digesters and treatment plants. The budget was developed after analyzing a portfolio of investments and determining the highest priority projects based on regulatory compliance, safety, cost-effectiveness and improving service to our customers.

This budget reflects a significant commitment in capital investments as we continue to replace aging infrastructure.

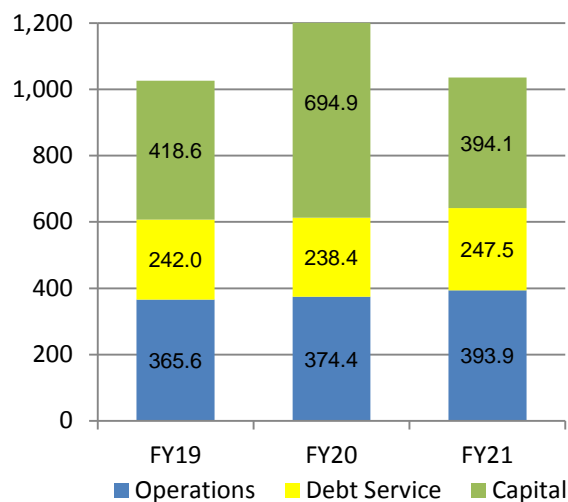
- In FY20-24, projected Water System capital cash flow spending totals \$1.90 billion, an increase of \$394.3 million or 26 percent from the prior total.
- The projected Wastewater System capital cash flow spending totals \$234.5 million, an increase of \$46.8 million or 25 percent from the prior five-year total.

## **BUDGET OVERVIEW**

The following charts summarize the budget for FY20 and FY21. The District-wide total appropriation is \$2.34 billion for Water System and Wastewater System operations, debt service and capital appropriations.

<b>FY19, FY20 AND FY21 APPROPRIATIONS (\$ Millions)</b>					
	<b>FY19 Budget</b>	<b>FY20 Budget</b>	<b>% Chg</b>	<b>FY21 Budget</b>	<b>% Chg</b>
<b>Water System</b>					
Operations	292.5	299.3	2.3%	315.4	5.4%
Debt Service	210.0	208.2	-0.9%	217.7	4.6%
Capital Appropriation	<u>367.5</u>	<u>622.6</u>	69.4%	<u>352.3</u>	-43.4%
<b>Total</b>	<b>869.9</b>	<b>1,130.1</b>	<b>29.9%</b>	<b>885.4</b>	<b>-21.7%</b>
<b>Wastewater System</b>					
Operations	73.1	75.1	2.7%	78.6	4.6%
Debt Service	31.9	30.2	-5.3%	29.8	-1.3%
Capital Appropriation	<u>51.1</u>	<u>72.3</u>	41.4%	<u>41.8</u>	-42.2%
<b>Total</b>	<b>156.2</b>	<b>177.6</b>	<b>13.7%</b>	<b>150.2</b>	<b>-15.4%</b>
<b>Total District</b>					
Operations	365.6	374.4	2.4%	393.9	5.2%
Debt Service	242.0	238.4	-1.5%	247.5	3.8%
Capital Appropriation	<u>418.6</u>	<u>694.8</u>	66.0%	<u>394.1</u>	-43.3%
<b>Total</b>	<b>1,026.1</b>	<b>1,307.6</b>	<b>27.4%</b>	<b>1,035.6</b>	<b>-20.8%</b>

**FY19 - FY21 Water and Wastewater Budgets**  
(\$ Millions)



Water System In FY20, the operations budget is increasing \$6.8 million, or 2.3 percent. Additional positions are being funded and salaries will increase based on a local Consumer Price Index (CPI). The additional positions will support capital projects and operations work such as infrastructure maintenance, ramp-up of pipeline replacement, and support functions to replace aging financial and human resources information systems. Overall, non-labor costs are essentially flat compared to the prior fiscal year. Budgeted increases for energy due to new tariffs and increased water production, software and license fees are offset by reductions in new additional funding for ongoing replacement of computer hardware and equipment, and the completion of the school Lead Sampling Program. The FY20 capital appropriation increase of \$255.1 million will fund work



such as water treatment plant upgrades, reservoir rehabilitation, pressure zone improvements, and pipeline replacements.

In FY21, the operations budget increases \$16.1 million, or 5.4 percent. The budget includes additional positions and overall salaries will increase based on a local CPI. In addition, cost increases are expected in areas such as fees and licenses, energy, computer hardware and software, and vehicle operating and maintenance costs. The FY21 decrease in capital appropriation of \$270.3 million is the result of several large multi-year projects being fully appropriated in FY20.

Wastewater System In FY20, the operations budget is increasing \$2.0 million, or 2.7 percent. Additional positions are being funded and salaries will increase based on a local CPI. These additional positions focus on meeting more stringent laboratory standards, recruitment outreach programs such as trades apprenticeships and college engineering intern, and administrative support. Overall, non-labor costs are decreasing. Budgeted increases for spoils/sludge disposal, reimbursable costs to the Water System, fees and licenses, and equipment rentals are more than offset by the lower use of chemicals due to process optimization. The FY20 capital appropriation increase of \$21.2 million will fund rehabilitation projects at the Main Wastewater Treatment Plant (MWWTP), remote facilities and interceptors.

In FY21, the operations budget increases \$3.5 million, or 4.6 percent. Salaries will increase based on a local CPI. Cost increases are expected in such areas as chemicals, reimbursable expense to the Water System, spoils/sludge disposal, facility parts and materials, energy, vehicle usage, insurance premiums and license fees. The FY21 decrease in capital appropriation of \$30.5 million is the result of several large multi-year projects being fully appropriated in FY20.

## **FIVE-YEAR CAPITAL IMPROVEMENT PROGRAM**

The FY20-24 combined Water and Wastewater System CIP includes \$2.53 billion of appropriations. Of this total, the Board of Directors approves the first two years or \$1.09 billion.

The following discussion focuses on the CIP cash flows as they establish the fiscal years' project spending and are a significant component of the rates. Over the span of the five-year CIP, the combined Water and Wastewater System planned cash flow spending will increase 13 percent from \$386.2 million in FY20 to \$436.5 million in FY24.

Water System Top Programs The following table shows the major Water System capital programs and the projected five-year cash flow spending as we continue to invest in infrastructure:

- Largest program spending is for Pipelines and Regulators which include plans to replace initially 17.5 growing to 25 miles of distribution pipelines per year, and to replace large diameter transmission pipelines.
- Water Treatment Plant Upgrades program is the next largest area of spending and includes operational and water quality improvements involving the filter, chemical, control and safety systems.

- Pressure Zone Improvements program includes upgrading or replacing reservoirs, pumping plants and transmission systems throughout the District to optimize storage capacity and improve water quality.
- Other programs will make improvements to the Mokelumne and other raw water aqueducts and storage reservoirs, install services and fire hydrants for new customers, and replace polybutylene and copper service laterals.

<b>Water System Major Capital Programs</b> <b>Five-Year CIP</b> (\$ Millions)	
Programs	FY20-FY24 Cash Flow
Pipelines and Regulators	548
Water Treatment Plant Upgrades	262
Pressure Zone Improvements	182
Reservoir Rehabilitation	147
Pipelines/Appurtenances	142
Raw Water Aqueducts	127
Polybutylene Lateral Replacements	76

Wastewater System Top Projects The following table shows the major Wastewater System capital projects and the projected five-year cash flow spending as we continue to make improvements to the Main Wastewater Treatment Plant to maintain our strong record of regulatory compliance:

- Treatment plant infrastructure work involves various aspects of the plant including drains, reactor piping, clarifiers, digesters, grit handling, concrete structures, and building systems.
- Rehabilitation work will continue on the 3<sup>rd</sup> Street sewer interceptor, and pre-screening and odor control improvements made at the resource recovery trucked waste facility.
- Improvements to the power generation station and flares will be made to improve reliability.

<b>Wastewater System Major Capital Projects</b> <b>Five-Year CIP</b> (\$ Millions)	
Projects	FY20-FY24 Cash Flow
Treatment Plant Infrastructure	92
Digester Upgrades	18
3 <sup>rd</sup> Street Sewer Interceptor Rehabilitation	17
Resource Recovery	16
Concrete Rehabilitation	15
Capital Equipment Replacement	14
Power Generation System	12

## CUSTOMER BILL IMPACTS

As a community, our quality of life depends on reliable, environmentally-sound water and wastewater services. A summary of bill impacts for the average single family residential user is shown below. The attachment provides detailed information for a wide range of use levels.

Customer bill impacts for FY20 and FY21 reflect the revenue necessary to meet the budget needs and lower projected water sales than planned. The proposed rates and charges are consistent with the District's 2015 Water and 2019 Wastewater Cost of Service studies that allocate costs among customer classes based on usage characteristics. State law requires basing rates and charges on cost of service.

- An average single family residential customer now uses 8 CCF per month or approximately 200 gallons per day. Their monthly water charges would increase \$3.62 in FY20 and an additional \$3.73 in FY21.
- An average single family residential customer discharges 6 CCF per month of their total water use to the sewer system. Their monthly wastewater treatment charges collected on the water bill would increase \$0.20 in FY20 and an additional \$0.87 in FY21.
- The wastewater Wet Weather Facilities Charge, collected on the property tax bill for customers in our SD-1 service area, is based on a customer's lot size. For most single family residential customers the annual wastewater Wet Weather Facilities Charge will increase by \$7.50 in FY20 and an additional \$4.46 in FY21. For single family residential customers with the largest lot size, over 10,000 square feet, the annual increase would be \$26.76 in FY20 and an additional \$15.90 in FY21.

## USING THE BUDGET DOCUMENT

The District's FY20 and FY21 biennial budget document is comprised of two volumes. This volume contains all of the key biennial budget information for both the Water and Wastewater Systems, including a District overview, detailed operating and capital budgets, and five-year financial forecasts. The supplemental volume provides summaries for all projects in the Capital Improvement Program. Since 1996, the District's budget documents have consistently received the Government Finance Officers Association's coveted Distinguished Budget Presentation Award. In addition, the California Society of Municipal Finance Officers has given awards for the District's biennial budget documents.





## CONCLUSION

As we approach 100 years of operation, it is an exciting time for the District as we pursue new technologies and methods to make every dollar work harder for our ratepayers. The District is well positioned to meet these challenges head-on with the same commitment, passion and innovation that have grown this utility into an agency that is inseparable from the vitality of the San Francisco Bay Area. With the ongoing support of the Board and staff, I am confident that we will meet our challenges well into the future.

In closing, this budget document serves as a policy document, a financial plan and an operations guide for the next two fiscal years. I want to thank the staff whose collaborative efforts resulted in a budgetary plan that is based on fair and reasonable water and wastewater rates.

Respectfully submitted,



ALEXANDER R. COATE  
General Manager

ARC:SDS

Attachment

## WHAT IS THE RATE IMPACT?

As part of our efforts to enhance transparency, we are providing this attachment to the General Manager's message to demonstrate the impact of rate changes. The tables show bill impacts of the FY20 and FY21 water and wastewater rates and charges for a range of customer classes and use levels.

### Water Charge Bill: Monthly Impacts

The table titled **Single Family Residential Water Charges on Water Bill** addresses a broad cross-section of single family residential users which represent the majority of District accounts. The impact of rate increases is illustrated for users ranging from 4 CCF (25<sup>th</sup> percentile) to 24 CCF (95<sup>th</sup> percentile) per month. The impact is also provided for both the median single family user of 6 CCF and the recent average of 8 CCF. The tables present monthly impacts for ease of use, although residential single family customers receive bills covering two month periods.

<b>Single Family Residential Water Charges on Water Bill</b>								
	Use (CCF)	FY19 Bill	FY20 Bill	Increase from FY19	Percent Change	FY21 Bill	Increase from FY20	Percent Change
25 <sup>th</sup> Percentile	4	\$39.67	\$42.23	\$2.56	6.5%	\$44.87	\$2.64	6.3%
50 <sup>th</sup> Percentile (median use)	6	\$47.19	\$50.23	\$3.04	6.4%	\$53.37	\$3.14	6.3%
75 <sup>th</sup> Percentile	10	\$66.46	\$70.76	\$4.30	6.5%	\$75.17	\$4.41	6.2%
95 <sup>th</sup> Percentile	24	\$152.12	\$161.98	\$9.86	6.5%	\$172.03	\$10.05	6.2%
Average Single Family Residential Use*	8	\$56.12	\$59.74	\$3.62	6.5%	\$63.47	\$3.73	6.2%

\*8 CCF/month represents recent average single-family residential use. Previous comparisons used 10 CCF/month, which represented historic average single-family residential use prior to recent drought conditions.

**Multi-Family Residential and Non-Residential Water Charges on Water Bill** demonstrates the impact on adopted rate increases for two multi-family residential users: one with 4 units at 25 CCF monthly use, and one with 5+ units at 50 CCF monthly use. Information is also included for sample commercial users at 50 CCF per month and industrial users at 500 CCF per month.

<b>Multi-Family Residential and Non-Residential Water Charges on Water Bill</b>									
	Meter (Inches)	Use (CCF)	FY19 Bill	FY20 Bill	Increase from FY19	Percent Change	FY21 Bill	Increase from FY20	Percent Change
Multi-Family Residential 4 units	1	25	\$169.95	\$181.12	\$11.17	6.6%	\$192.35	\$11.23	6.2%
Multi-Family Residential 5+ units	1	50	\$302.70	\$322.62	\$19.92	6.6%	\$342.60	\$19.98	6.2%
Commercial	1	50	\$301.70	\$321.12	\$19.42	6.4%	\$341.10	\$19.98	6.2%
Industrial	2	500	\$2,751.36	\$2,928.27	\$176.91	6.4%	\$3,110.35	\$182.08	6.2%

### Wastewater Treatment Charge Bill: Monthly Impacts

Wastewater customer charges appear in two separate places for our SD-1 customers, on the water bill and the property tax bill. The two tables presented in this section, **Wastewater Charges on Water Bill** and **Wet Weather Facilities Charge on Property Tax Bill**, address each of these bills.

Wastewater charges are based on volume of water purchased, but are capped at a maximum of 9 CCF per month per single family residential user as only indoor water use is discounted. The table titled **Wastewater Charges on Water Bill** shows bill impacts for both an average single family residential user discharging 6 CCF per month and a single family residential user discharging at the maximum, capped amount. In addition, impacts are shown for two multi-family residential users: one with 4 units at 25 CCF per month, and one with 5+ units at 50 CCF per month. Information is also included for sample commercial users at 50 CCF per month and industrial users at 500 CCF per month.

<b>Wastewater Charges on Water Bill</b>									
	<b>Meter (Inches)</b>	<b>Use (CCF)</b>	<b>FY19 Bill</b>	<b>FY20 Bill</b>	<b>Increase from FY19</b>	<b>Percent Change</b>	<b>FY21 Bill</b>	<b>Increase from FY20</b>	<b>Percent Change</b>
Average Single Family Residential	5/8	6	\$21.95	\$22.15	\$0.20	0.9%	\$23.02	\$0.87	3.9%
Single Family Residential	5/8	9	\$25.55	\$25.96	\$0.41	1.6%	\$26.98	\$1.02	3.9%
Multi-Family Residential 4 units	1	25	\$70.64	\$68.81	(\$1.83)	-2.6%	\$71.50	\$2.69	3.9%
Multi-Family Residential 5+ units	1	50	\$143.62	\$149.52	\$5.90	4.1%	\$155.30	\$5.78	3.9%
Commercial	1	50	\$148.10	\$154.00	\$5.90	4.0%	\$159.78	\$5.78	3.8%
Industrial	2	500	\$8,006.60	\$9,037.50	\$1,030.90	12.9%	\$9,387.78	\$350.28	3.9%

### Wastewater Wet Weather Facilities Charge: Annual Impacts

The table titled **Wet Weather Facilities Charge on Property Tax Bill** shows updated annual Wet Weather Facilities Charges based on lot size.

<b>Wet Weather Facilities Charge on Property Tax Bill</b>							
	<b>FY19 Bill</b>	<b>FY20 Bill</b>	<b>Increase from FY19</b>	<b>Percent Change</b>	<b>FY21 Bill</b>	<b>Increase from FY20</b>	<b>Percent Change</b>
Small Lot 0-5,000 sq. ft.	\$103.74	\$111.24	\$7.50	7.2%	\$115.70	\$4.46	4.0%
Medium Lot 5,001 - 10,000 sq.ft.	\$162.06	\$173.78	\$11.72	7.2%	\$180.74	\$6.96	4.0%
Large Lot >10,000 sq. ft.	\$370.44	\$397.20	\$26.76	7.2%	\$413.10	\$15.90	4.0%

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## INTRODUCTION: DISTRICT OVERVIEW

East Bay Municipal Utility District (EBMUD) supplies water and wastewater treatment for East Bay communities located within Alameda and Contra Costa Counties in California. It is a publicly owned utility formed under the Municipal Utility District (MUD) Act passed by the state legislature in 1921. The Act permits the formation of multi-purpose government agencies to provide needed public services on a regional basis.



Pardee Reservoir

In 1923, voters in the eastern San Francisco Bay Area created EBMUD to provide water service. Ninety percent of the water used by EBMUD comes from rain and melted snow within the 627-square mile protected watershed of the Mokelumne River and captured behind Pardee and Camanche Reservoirs located on the western slope of the Sierra Nevada. Raw or untreated water is transported more than 90 miles west via three parallel aqueducts to East Bay water treatment plants or terminal reservoirs, and from there to 170 local reservoirs and 4,200 miles of distribution pipeline. To protect EBMUD's customers from the effects of a severe drought, in 2002 the District created the Freeport Regional Water Project to convey up to 100 million gallons per day of supplemental Sacramento River water. The first water deliveries to the East Bay were in 2014 due to the drought that was being experienced at that time.

In 1944, voters in six of the East Bay cities served by EBMUD elected to form Special District No. 1 to treat wastewater before being released into San Francisco Bay. In 1951, EBMUD began providing wastewater treatment.

EBMUD is a California special district and has a seven-member Board of Directors publically elected from wards within the service area. The Board is committed to governing through an open, public process, guided by the District's Mission Statement. Policies are then implemented under the direction of the General Manager. The General Manager and General Counsel are appointed by and report directly to the Board. The Senior Management Team is responsible for managing the operations of the District. EBMUD employs over 2,000 people in service to its mission. The Water and Wastewater Systems are legally distinct entities managed by the same Board.

The mission of the District is:

*"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."*

For a complete history of the East Bay Municipal Utility District, please visit the history page at [www.ebmud.com/about-us/who-we-are/mission-and-history/](http://www.ebmud.com/about-us/who-we-are/mission-and-history/).

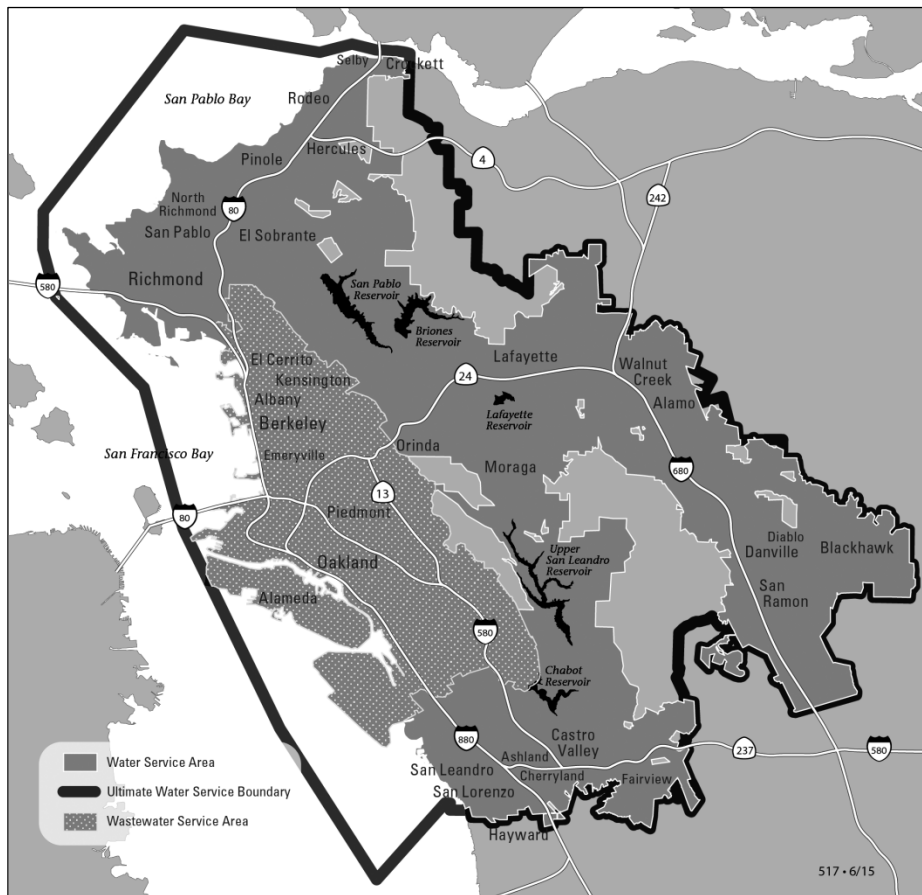
## COMMUNITY

### Service Area Description

Since 1929, when EBMUD first delivered water from the Sierra Mountains to the East Bay, the population served has grown from approximately 0.5 million to 1.4 million. Today the EBMUD service area includes many of the Bay Area's largest employers. The District's vitality is inseparable from the \$776 billion Bay Area regional economy which is essential to the economic health of California and the nation. The gross domestic product (GDP) of the Bay Area is one of the highest in the United States. The District's infrastructure is diverse and extensive, with a replacement cost conservatively estimated at more than \$15 billion.

The EBMUD water service area includes a large part of urban and suburban development in Alameda and Contra Costa Counties. The service area includes 20 cities and 15 unincorporated communities located on the eastern shore of San Francisco Bay (the "East Bay"). It is a 332-square mile area extending from Crockett in the north to San Lorenzo in the south, and eastward from San Francisco Bay through the Oakland-Berkeley hills to Walnut Creek and south through the San Ramon Valley. The wastewater service area is an 88-square mile area along the east shore of the bay extending from Richmond in the north to Oakland in the south.

This map shows the EBMUD water and wastewater service area.



## Population

Approximately 1.4 million people are served by the Water System, 685,000 of whom are also served by the Wastewater System. Oakland, the largest city in Alameda County, is the eighth largest in the state. The following table includes population data for the largest cities in the District's service area.

### Population Trends\*

Seven Largest Cities in Service Area  
Alameda and Contra Costa Counties, and California

City/County	1/1/1980	1/1/1990	1/1/2000	1/1/2010	1/1/2018
Oakland	339,300	371,100	399,500	390,757	428,827
Berkeley	103,300	102,700	102,700	112,621	121,874
Richmond	74,300	86,600	99,200	103,661	110,967
San Leandro	64,200	68,100	79,500	84,977	87,598
Alameda	63,900	75,900	72,300	73,835	78,863
San Ramon**	***	35,300	44,800	72,148	82,643
Walnut Creek**	53,300	60,600	64,300	64,140	70,667
Alameda County	1,105,380	1,274,700	1,443,700	1,509,240	1,660,202
Contra Costa Co.	657,250	797,600	948,800	1,047,948	1,149,363
California	23,669,000	29,558,000	33,872,000	37,223,900	39,809,693

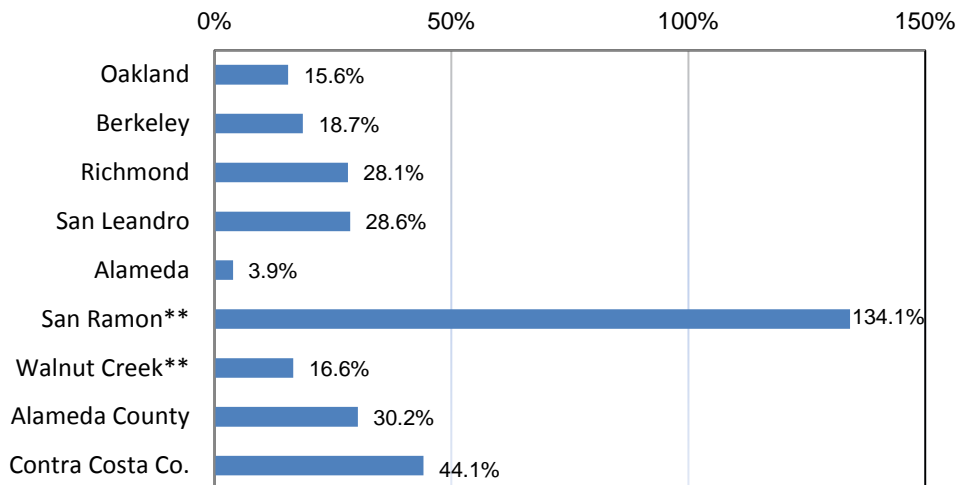
\* Released May 1, 2018, by California Department of Finance, Demographic Research Unit, Population Estimates for California Cities.

\*\* EBMUD does not serve all of San Ramon or Walnut Creek, but total population is shown for each.

\*\*\* San Ramon was unincorporated at the time, data not available.

### Population Growth Since 1990

Seven Largest Cities in Service Area and Both Counties



\*\* Total population shown even though EBMUD does not serve the entire community.

## WATER AND WASTEWATER SYSTEMS

### Water Supply

This section describes how EBMUD delivers water from the Sierra Nevada foothills to the Bay Area and how the wastewater plant treats municipal wastewater. During its 95 years, the population has grown and the system has expanded to meet increasing needs.

Ensuring a reliable, high quality water supply for today and the future is one of the District's highest priorities. Significant capital investments have been made to ensure a reliable water supply such as securing supplemental water supplies and expanding recycled water supply programs.



*Mokelumne River*

One of the most important factors in water quality is the source: the purer the source the better the water. Ninety percent of EBMUD's water comes from the 627-square mile watershed of the Mokelumne River located on the western slope of the Sierra Nevada. This area is mostly national forest, EBMUD-owned lands and other undeveloped lands little affected by human activity. The Mokelumne watershed collects snowmelt which flows into Pardee Reservoir near the town of Valley Springs.

Three large aqueducts carry this water more than 90 miles from Pardee Reservoir to the East Bay and protect it from pesticides, agricultural and urban runoff, municipal sewage and

industrial discharges. When water demand is high or during times of operational need, EBMUD also draws water from protected local watersheds.

Before water reaches the tap, EBMUD takes many steps to ensure its quality. This includes carefully managing watershed lands and reservoirs; treating the water; maintaining water quality through a complex system of distribution pipes, pumping plants and reservoirs; testing water samples in our lab and in the field; and addressing consumer concerns. These efforts ensure that all customers receive high-quality drinking water that meets or surpasses all state and federal regulatory requirements.

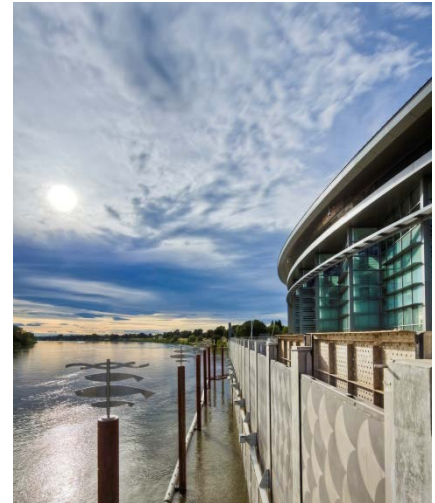


*Pardee Dam*

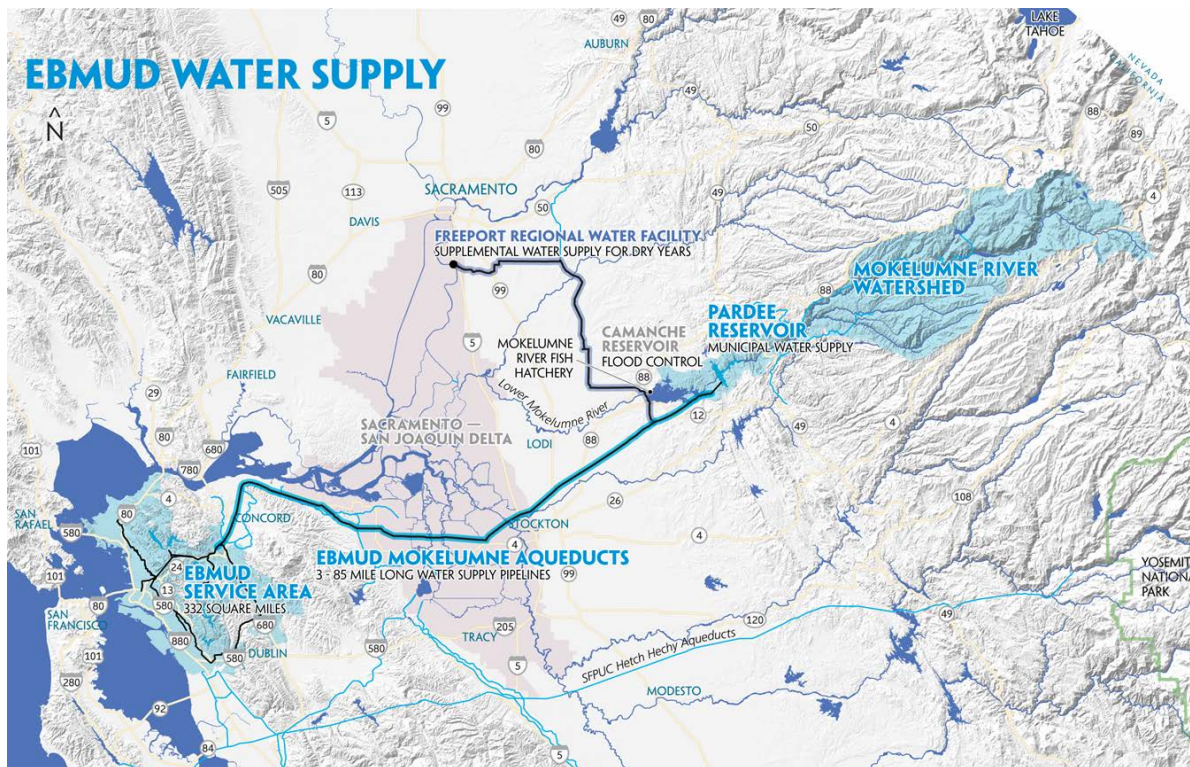


Every five years, EBMUD updates its Urban Water Management Plan to ensure a reliable water supply for the next generation. This includes making the best use of limited supplies through water conservation and recycling and developing long-term projects to augment the water supply.

The map below shows how the water travels from the Mokelumne River Watershed into Pardee Reservoir, across the Central Valley in EBMUD's Mokelumne Aqueducts, and to the EBMUD Service Area. Customers discharge wastewater into the sewer system and makes its way to the Wastewater Treatment Plant for treatment, and finally to the San Francisco Bay.



*Freeport Water Project*



## Wastewater Treatment

EBMUD's wastewater treatment plant provides service for 685,000 people along the eastern shore of the San Francisco Bay, and treats approximately 56 million gallons of municipal wastewater per day. Wastewater is collected from homes and businesses through privately owned sewer laterals that feed into a network of city and other regional sewers, which eventually join the EBMUD's sewer interceptors and pump stations. These facilities carry the wastewater to its treatment plant located in Oakland. Stormwater is collected through separate community-owned systems. The plant treats sewage to meet stringent state and federal standards before recycling it or releasing it to the Bay. Prior to its construction, raw sewage was discharged directly into the Bay. As a partner in the stewardship of the Bay, EBMUD works with residents and businesses to help them keep contaminants out of the sewer system.



*Wastewater Treatment Plant*

EBMUD has been recycling and producing renewable energy at its wastewater plant since the mid-1980s. EBMUD's plant transforms sewage and other organic wastes into green energy, nutrient-rich soil conditioner and recycled water. EBMUD produces sufficient renewable energy to meet its onsite power demands. Excess energy is sold to the neighboring Port of Oakland. On average, EBMUD produces 130 percent of the power it needs to run its wastewater operations.



*Power Generation Station*

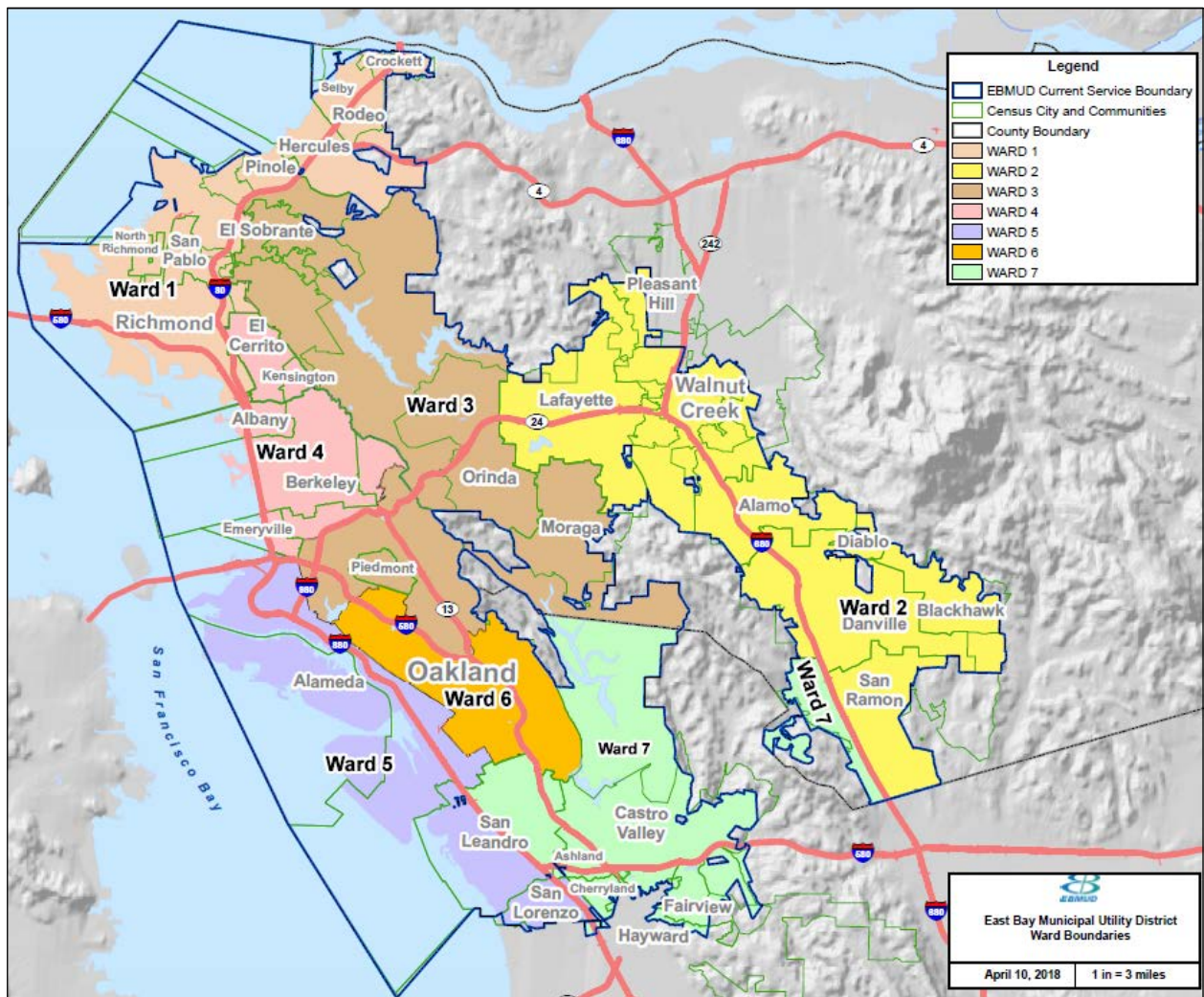


## DISTRICT ORGANIZATION

### BOARD OF DIRECTORS

EBMUD has a seven-member elected Board of Directors who determines overall policies, which are then implemented under the direction of the General Manager. The Board of Directors believes that EBMUD has a public responsibility to preserve the region's resources and set industry standards for water and wastewater utilities.

Directors are publicly elected to four-year terms from seven wards within the service area. The following map shows the areas included in each ward.



The current Board of Directors is shown below. More information on the Board of Directors can be found at: [www.ebmud.com/about-us/board-directors/your-board-members/](http://www.ebmud.com/about-us/board-directors/your-board-members/).

**WARD 1      Lesa R. McIntosh      Term expires 12/31/2020**

CONTRA COSTA COUNTY: Cities of Crockett, Hercules, Rodeo, and San Pablo; portions of Richmond and Pinole; and communities of North Richmond and Selby.

**WARD 2      John A. Coleman      Term expires 12/31/2022**

CONTRA COSTA COUNTY: Cities of Alamo, Lafayette, Walnut Creek, Town of Danville; portions of San Ramon and Pleasant Hill and communities of Blackhawk and Diablo.

**WARD 3      Marguerite Young - President      Term expires 12/31/2022**

ALAMEDA COUNTY: City of Piedmont, and a substantial portion of Oakland.  
CONTRA COSTA COUNTY: Cities of Orinda and El Sobrante; Town of Moraga, and portions of Pinole and Richmond.

**WARD 4      Andy Katz      Term expires 12/31/2022**

ALAMEDA COUNTY: Cities of Albany, Berkeley, and Emeryville; and a portion of Oakland.  
CONTRA COSTA COUNTY: Cities of El Cerrito and Kensington.

**WARD 5      Doug Linney - Vice-President      Term expires 12/31/2020**

ALAMEDA COUNTY: Cities of Alameda and San Lorenzo; West Oakland and Oakland Airport Area, and a portion of San Leandro.

**WARD 6      William B. Patterson      Term expires 12/31/2020**

ALAMEDA COUNTY: Portions of Oakland (East Oakland and south of Park Boulevard/5<sup>th</sup> Avenue) to the San Leandro City boundary.

**WARD 7      Frank Mellon      Term expires 12/31/2022**

ALAMEDA COUNTY: Castro Valley; portions of San Leandro and Hayward; communities of Cherryland and Fairview.  
CONTRA COSTA COUNTY: Portion of San Ramon.

Board meetings are open to the public and are held twice monthly on the second and fourth Tuesday of each month. The Board may also meet at other times as needed. The Board is committed to governing through an open, public process, guided by the EBMUD Mission Statement.



## SENIOR MANAGEMENT

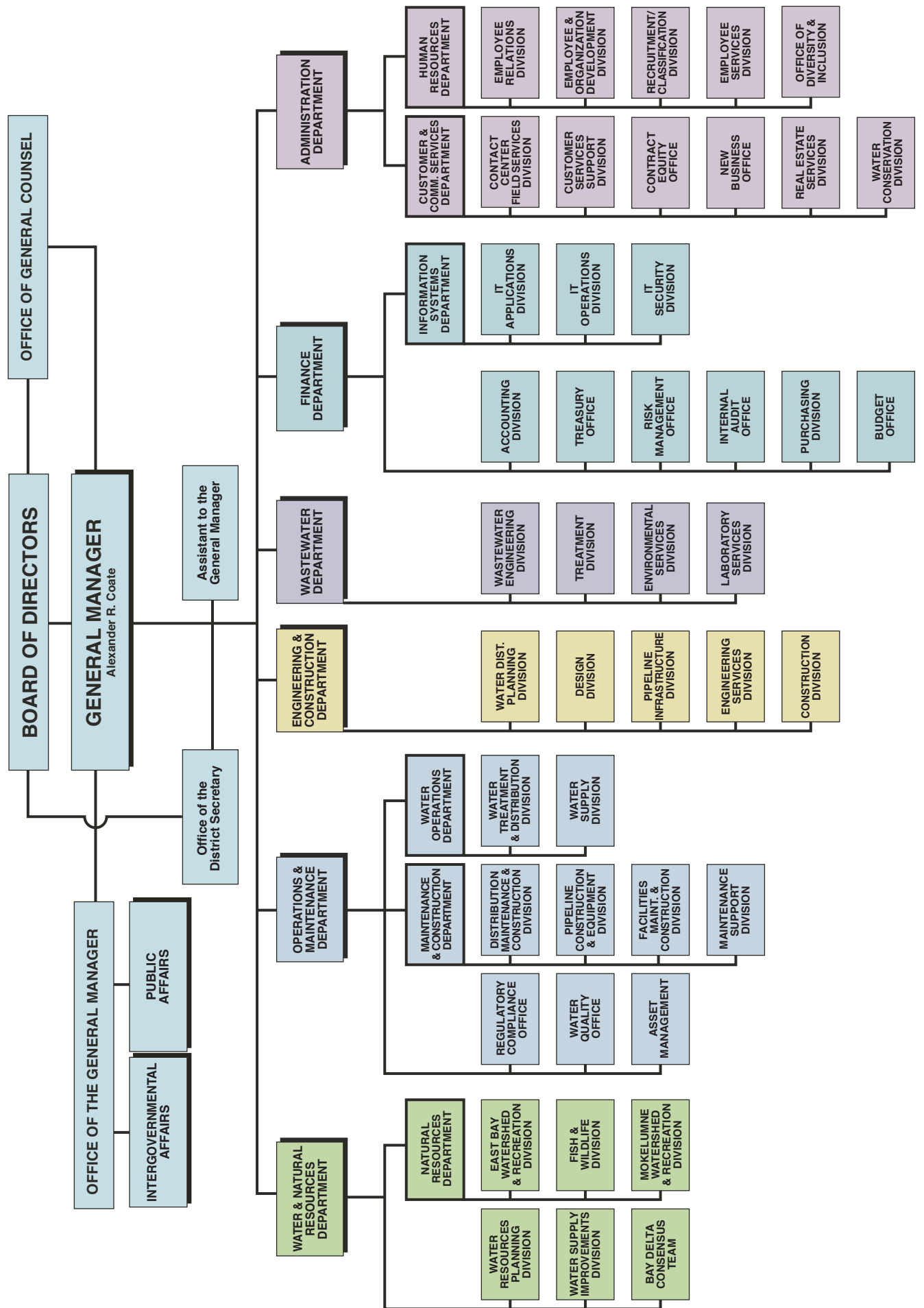
The General Manager and General Counsel are appointed by and report directly to the Board of Directors.

Alexander R. Coate	General Manager
Craig S. Spencer	General Counsel

The Senior Management Team listed below is responsible for managing the operations of the District.

Laura A. Acosta	Manager of Human Resources
Michael R. Ambrose	Operations and Maintenance Department Manager
David A. Briggs	Operations and Maintenance Department Manager
Clifford C. Chan	Director of Operations and Maintenance
Rischa S. Cole	Secretary of the District
Marlaine K. Dumaine	Special Assistant to the General Manager – Governmental Affairs
Xavier J. Irias	Director of Engineering and Construction
Andrew L. Lee	Manager of Customer and Community Services
Andrew J. Levine	Manager of Information Systems
Sophia D. Skoda	Director of Finance
Michael T. Tognolini	Director of Water and Natural Resources
Eileen M. White	Director of Wastewater
Kelly Zito	Special Assistant to the General Manager – Communications

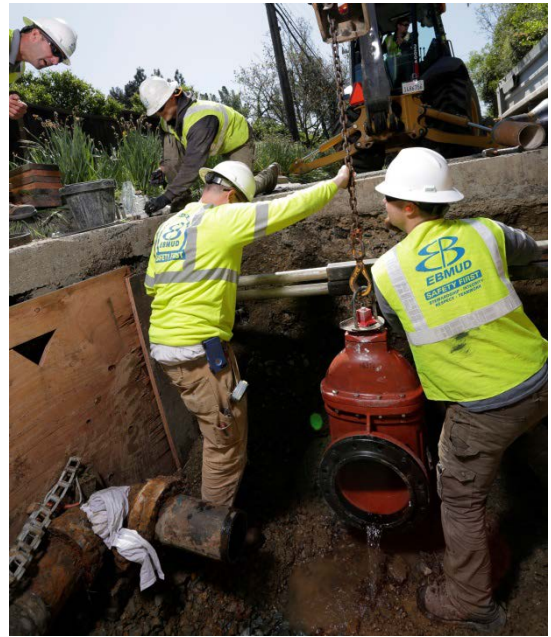
The chart on the following page provides an overview of the organization and shows the relationships between different departments and divisions within the District. It can also be found at [www.ebmud.com/about-us/board-directors/management/](http://www.ebmud.com/about-us/board-directors/management/).



## WORKFORCE

EBMUD has over 2,000 employees. Most are represented by the American Federation of State, County and Municipal Employees, Locals 444 and 2019; the International Federation of Professional and Technical Engineers, Local 21; and the International Union of Operating Engineers, Local 39. The majority of employees work in the East Bay, but employees also work in the Central Valley and Mokelumne watershed area.

EBMUD is an equal employment opportunity (EEO) employer, and a proud leader in taking legal, proactive steps that support a diverse, inclusive workforce. From Board policies that ensure equal employment opportunities for all persons based on job-related merit, the District uses inclusive and creative recruitment, professional development and placement methods to enhance the District's efforts to achieve a workforce reflective of the labor market in the communities we serve.



*Field Crew*



*Administration Building*



*Wastewater Treatment Plant*

## STRATEGIC PLAN SUMMARY

The District's Strategic Plan incorporates its mission and principles, and identifies its goals, strategies, objectives, and key performance indicators. The plan guides staff in the management and allocation of resources and assets. The Strategic Plan precedes and guides the development of the biennial budget and the five-year capital improvement program to ensure that necessary resources are provided to implement the strategies and objectives.

The District's current Strategic Plan was adopted by the Board of Directors in July 2018. It is a blueprint for how EBMUD will respond to and prioritize challenges and evolving priorities. The plan incorporates the principles of fiscal responsibility, sustainability and effective use of resources that minimize the District's environmental footprint.

The Strategic Plan includes the following elements:

- **Goals** that define what the District wants to achieve;
- **Strategies** that define which actions to take to reach each goal;
- **Objectives** that reflect what needs to be accomplished in the near term; and
- **Key Performance Indicators (KPIs)** that measure how well the District is doing in achieving its goals.

### Strategic Plan Goals

The District has established the following comprehensive set of goals integrating sustainability principles:

- **Long-Term Water Supply**  
We ensure a reliable high-quality water supply for the future.
- **Water Quality and Environmental Protection**  
We meet or surpass environmental and public health standards and protect public trust values.
- **Long-Term Infrastructure Investment**  
We maintain and improve the District's infrastructure in a cost-effective manner to ensure sustainable delivery of reliable, high quality service now and in the future, addressing economic, environmental, and social concerns.
- **Long-Term Financial Stability**  
We manage the District's finances to meet funding needs and maintain fair and reasonable water and wastewater rates.
- **Customer and Community Services**  
We build stakeholder trust and long-term relationships through service excellence, proactive communication and education.
- **Workforce Planning and Development**  
We create an environment that attracts, retains, and engages a high performing diverse workforce in support of the District's mission and core values.



## Implementing the Plan

The fundamental purpose of the strategic planning process is to define the actions in the next three to five years which are necessary to meet the District's mission now and well into the future. The General Manager and the Senior Management Team lead the implementation of the Strategic Plan, with input from various sources such as master plans and long-range plans, new initiatives, and employee and customer feedback.

The Strategic Plan is adopted by the Board of Directors. Upon adoption, development of actions to implement the Strategic Plan can begin. The Strategic Plan provides an overall high-level direction to prioritize resources to achieve future success, but it does not describe all of the specific actions. By developing actions that are linked to the Strategic Plan, the District can ensure that it focuses its resources on the District's highest priorities.

### Strategic Plan Process



Annual individual employee performance plans are prepared to establish and communicate responsibilities, accountabilities, and performance expectations for priorities contained in the Strategic Plan.

The plan includes a series of KPIs that are measurable, comprehensive, and reflect the various strategies contained within the six Strategic Plan goals. KPIs are measured against targets annually to enable the District to evaluate its progress. The latest KPI report was presented to the Finance Committee in October 2018.

Strategic Plan 2018 goals, strategies, objectives, and KPIs are contained in the Appendix to this volume.

For an online copy of the 2018 Strategic Plan, go to [www.ebmud.com/about-us/who-we-are/](http://www.ebmud.com/about-us/who-we-are/).

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# CHAPTER 1: FINANCIAL ORGANIZATION & BUDGET PROCESS

The Introduction discussed the District's Strategic Plan which guides the development of the biennial budget and the five-year capital improvement program. This chapter describes the District's financial structure and organization, and budget development process. It provides the parameters under which the budget is created and a comprehensive financial overview.

## FINANCIAL ORGANIZATION

### Fund Structure and Descriptions

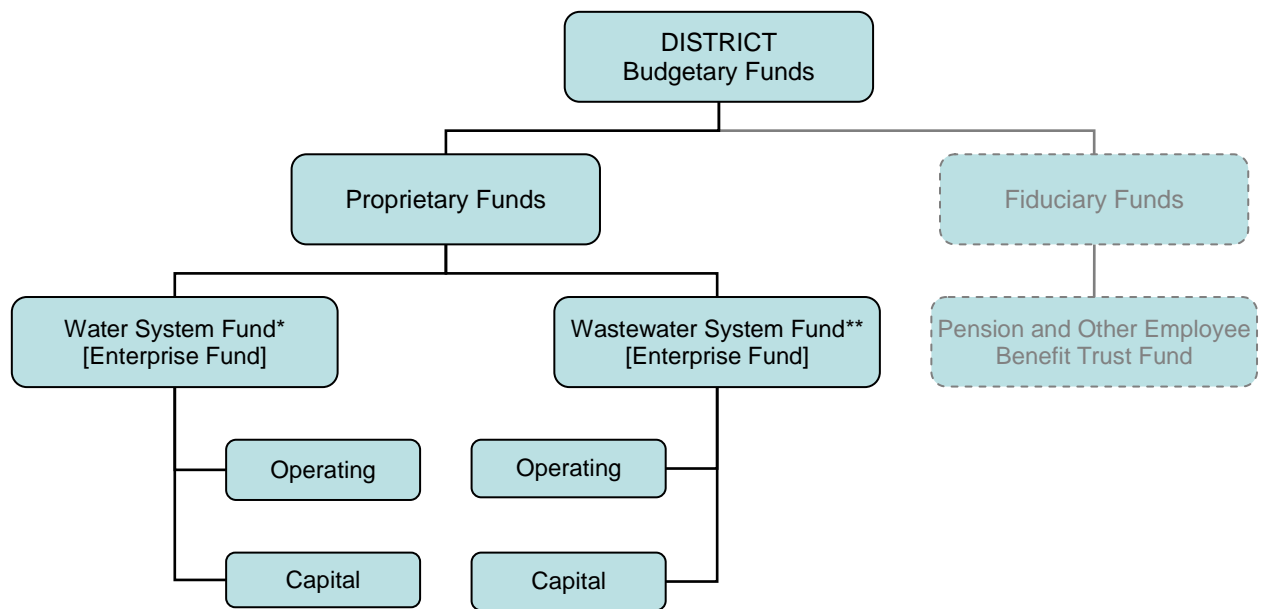
As illustrated in the graphic on the following page, the District's financial structure is composed of proprietary and fiduciary funds (see glossary for definitions of terms). The proprietary funds include two legally distinct and financially independent enterprise funds: the Water System and the Wastewater System. The two separate funds preserve the unique expenditure and revenue distinction between the two entities. When services are provided by one system for the benefit of the other, the appropriate fund is billed and cash transfers are made to the other.

- The Water System is engaged in the collection, transmission, and distribution of water to communities within Alameda and Contra Costa Counties of California. In addition, the Water System provides administrative, financial, and other support services to the Wastewater System. These costs are charged to the Wastewater System. The Water System consists of fourteen staffed departments.
- The Wastewater System is engaged in the treatment of wastewater from residences and industries in the California communities of Alameda, Albany, Berkeley, Emeryville, Oakland, Piedmont, and the Stege Sanitary District. The Wastewater System consists of one staffed department.

Both systems are proprietary, enterprise funds. Enterprise funds are used to account for operations that are financed and operated in a manner similar to private business enterprises where the intent of the governing body is that the expense of providing goods or services to the general public on a continuing basis be financed or recovered primarily through user charges.

The Water System performs many support functions for the Wastewater System. These functions include but are not limited to financial services such as accounting, human resources services such as recruitment, information technology, customer services, legal services, and general oversight and governance. The Wastewater System reimburses the Water System directly for these services through a joint administrative and general annual expense.

Both systems are governed by the same elected Board of Directors, and share policies and procedures. Throughout this book, the 'District' refers to the East Bay Municipal Utility District and is understood to encompass both the Water and Wastewater Funds.



**\*Departments**

Operations and Maintenance Support  
 Maintenance & Construction  
 Water Operations  
 Water Resources  
 Natural Resources  
 Engineering & Construction  
 Office of the General Manager  
 Finance  
 Information Systems  
 Customer & Community Services  
 Human Resources  
 Office of the General Counsel  
 Water Recycling Program  
 Administration

**\*\*Department**

Wastewater

These funds are organized according to the Uniform System of Accounts for Water Utilities, as established by the California Public Utilities Commission, and adhere to the Government Finance Officers Association (GFOA) requirements for enterprise funds.

In addition to the District's proprietary funds, the District maintains a fiduciary fund used to account for resources held for the benefit of parties outside the government. The District's fiduciary fund consists of the Pension and Other Employee Benefit Trust fund, which is maintained to account for assets held by the Employees' Retirement System in a trustee capacity for vested and retired employees. This book does not address the District's fiduciary funds.



## Financial Reporting

The District prepares its financial reports in conformity with generally accepted accounting principles used in the United States of America. At the conclusion of each fiscal year, the Finance Department prepares the Comprehensive Annual Financial Report (CAFR) in compliance with principles and standards for financial reporting set forth by the Governmental Accounting Standards Board (GASB), and the guidelines recommended by the Government Finance Officers Association (GFOA) of the United States and Canada. An application has been submitted to GFOA for the Certificate of Achievement for Excellence in Financial Reporting for the Comprehensive Annual Financial Report for the fiscal year ending June 30, 2018. The Certificate of Achievement is a prestigious national award recognizing conformance with the highest standards for preparation of a state and local government financial report. To be awarded a Certificate of Achievement, a government unit must publish an easily readable and efficiently organized CAFR that satisfies both generally accepted accounting principles and applicable legal requirements. This would be the fourteenth consecutive year that EBMUD has received this award.

## Budgetary and Accounting Basis

The basis of budgeting and accounting refers to the method of recognition of revenue and expenses in financial and budgetary reporting.

EBMUD's budgets are prepared on a modified cash flow basis which projects the District's cash inflows and outflows over the course of a fiscal year (July 1 through June 30) excluding physical and intangible assets such as depreciation. Revenues are recognized as they are received and accounted for while obligations for expenditures are recognized when a commitment is made through an encumbered purchase order or actual expense.

EBMUD's accounts and transactions are tracked on an accrual basis, which is the basis of accounting under generally accepted accounting principles. Under this method, all assets and liabilities associated with operations are included on the balance sheet; and revenues are recorded when earned and expenses are recorded at the time commitments are incurred.

Depreciation and amortization are handled differently in budgetary reporting and in financial reporting. In budgetary reporting, depreciation and amortization are excluded, and the repayment of the principal on debt as expense is included. In financial reporting, depreciation and amortization are included, and the repayment of the principal on debt as expense is excluded.

This table illustrates the differences between the budget and accounting basis described above.

	<b>BUDGETARY Modified Cash Flow Basis</b>	<b>ACCOUNTING Accrual Basis</b>
<b>Revenue</b>	Recognized when received and accounted for	Recorded when earned
<b>Obligations</b>	Recognized when a commitment is made through encumbrance or expense	Recorded at the time commitments are incurred
<b>Depreciation and amortization</b>	Excluded	Included
<b>Repayment of principal on debt</b>	Included	Excluded

## Financial Planning

The District prepares a biennial strategic plan and annual financial forecasts that provide the basis for developing the budget. Long-term financial stability is a goal in the District's Strategic Plan, which includes managing the District's finances to support its needs and maintain reasonable water and wastewater rates.

Revenue requirements over a five-year planning horizon are evaluated to determine the level of rate adjustments required for the upcoming budget years. To the extent possible, increases in water and wastewater rates are adjusted to avoid large fluctuations.

## Financial Policies

The District establishes policies and resolutions to comply with the stipulations set forth in the MUD Act. The majority of District policies are reviewed biennially; some policies, such as the Investment Policy shown below, are reviewed annually. The adoption date changes only if revisions are made to the policy. The policies described below set forth key objectives for long-range financial planning and control.

The following policies are included in the Appendices as a reference:

Policy 4.02	Cash Reserves and Debt Management	Adopted April 2017
Policy 4.04	Financial Planning and Budgetary Control	Adopted June 2018
Policy 4.07	Investment Policy	Adopted April 2018
Policy 4.13	Establishing Water and Wastewater Rates	Adopted April 2016

**Policy 4.02: Cash Reserves and Debt Management:** identifies specific financial metric targets.

The District strives to maintain operating reserves at a level sufficient to meet working capital and unanticipated needs, specifically:

- Maintaining Working Capital Reserve of at least 3.0 times monthly net operating and maintenance expenses.
- Maintaining Self-Insured Liability Program Reserve based on the Actuarial Self-Insured Retention (SIR) funding recommendation.
- Maintaining Workers' Compensation Program Reserve based on the Actuarial SIR funding recommendation.
- Maintaining Rate Stabilization Reserve:
  - For Water System – a minimum of 20 percent of projected annual water volume revenues.
  - For Wastewater System – a minimum of 5 percent of operating and maintenance expenses.

The District strives to maintain a reasonably conservative ratio between current funding sources and debt financing:

- Maintaining an annual revenue bond debt service coverage ratio of at least 1.6 times.
- Limiting debt-funded capital to no more than 65 percent of the total capital program over each five-year planning period.
- Limiting commercial paper/variable rate debt to 25 percent of outstanding long-term debt.

**Policy 4.04: Financial Planning and Budgetary Control:** provides for the efficient use of District resources through financial planning and cost control; keeps total annual expenditures to the level of total annual revenue; provides periodic status reports on revenues, expenditures, and investments; and establishes the authority of the General Manager to transfer up to 5 percent of each fiscal years' budget between the capital and operating budgets within each System's funds, provided that the total budget for each System fund remains unchanged. Budget transfers between the Water and Wastewater Systems are prohibited.

**Policy 4.07: Investment Policy:** guides the investment of District funds. The policy ensures that all investments are compliant with the District's Conflict of Interest Code and state law, and protects investments (safety), ensures availability of funds when needed (liquidity), maximizes earnings on the investment portfolio (yield) while reducing risk by investing in a variety of instruments (diversification). Among the key guidelines included in the policy are the types and characteristics of permitted investments, parameters for investment decisions, reporting requirements, and internal controls.

**Policy 4.13: Establishing Water and Wastewater Rates:** sets forth the rate methodology, rate design, and rate distribution that provide adequate revenues while keeping rates affordable, encouraging conservation and efficient use of water, and reflecting the cost of providing service to customers. Rates should provide sufficient revenue to support a safe, reliable, and sufficient water supply and wastewater treatment services to its customers over the long term.

## **BUDGET PROCESS**

During the budget process, the District makes decisions on the efficient use of its resources using the Strategic Plan for guidance. A financial plan and biennial budget are established for the Water and the Wastewater Systems that includes the operations and capital programs and sets levels of related operations, capital and debt service expenditures that may be made.

The budget reflects the costs necessary to provide customers with safe, reliable water and wastewater service over the long term while keeping rates fair and reasonable. The budget is also used to develop rates and charges that provide adequate revenues to meet the District's needs, and encourages the efficient use of water.

Decisions on allocating resources and addressing budget needs do not end when the Board adopts the budget. Throughout the year, departments are responsible for implementing the budget and monitoring budget performance, responding to unforeseen or emergency circumstances, and participating in long-range financial planning.

The District received the GFOA's Distinguished Budget Presentation Award for its FY18 and FY19 biennial budget document. This is the fifteenth consecutive budget document for which the District has received the GFOA award. For the fourth time, the California Society of Municipal Finance Officers (CSMFO) has presented the Excellence in Budgeting Award to the District. To qualify for these awards, the budget document had to meet stringent guidelines and criteria.

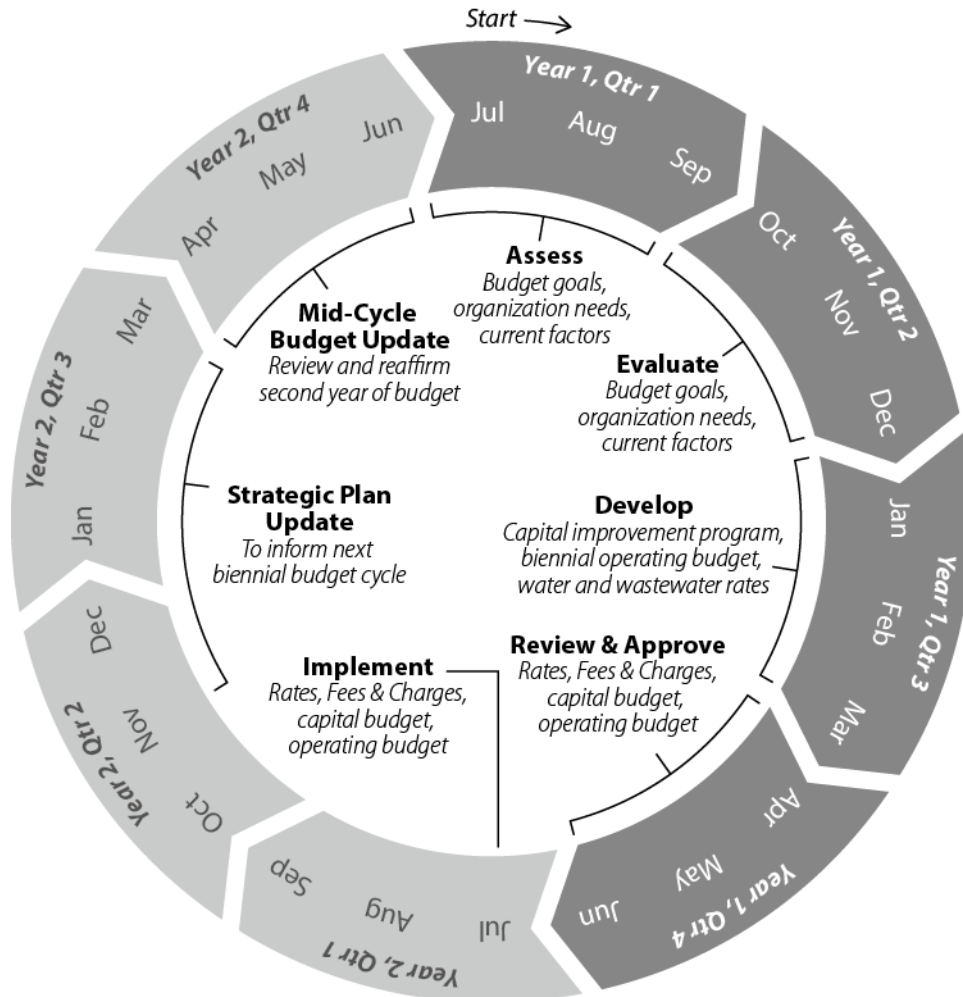
### **Balanced Budget**

The District budget is balanced when operating revenues are equal to or greater than operating expenditures including debt service, and ending fund balances meet minimum policy levels. The District establishes its budget on the principle of overall revenue neutrality, as outlined in the American Water Works Association (AWWA) Principles of Water Rates, Fees and Charges recommendations for government-owned utilities. The District's rates and charges are set to ensure that revenues are sufficient to recover the total cash needs in a given fiscal year.



## Budget Development Calendar

The District has a biennial budget process which is represented in the graphic below and described more fully in the following text.



**Assess:** **Budget goals, organization needs, and current factors**

July  
August  
September

Strategic Plan adopted.  
Budget guidelines and assumptions prepared.  
Capital budget development starts.

**Evaluate:** **Budget goals, organization needs, and current factors**

October  
November  
December

Operating budget development starts.  
Review of capital budget requests begins.  
Review of operating budget requests begins.

**Develop:                      Biennial operating budget, capital improvement program, water and wastewater rates**

January / February    Operating budget and capital improvement program recommendations are developed by Senior Management with input from the Board of Directors.

Water and Wastewater rates to fund budget needs are proposed.

March                      Documents prepared to present proposed budget and rates to the Board and the public.  
The General Manager presents the proposed operating and capital budgets, and proposed rates, fees and charges to the Board at budget workshops.

**Review & Approve:      Rates, fees & charges, capital budget, operating budget**

April                      Another budget workshop occurs if needed to address any direction given by the Board at previous budget workshops.

California Proposition 218 notices are distributed to property owners.

May                        The General Manager's recommendations on the proposed rates, charges, and fees are filed with the Board of Directors.

June                       Public hearing on rates is held.  
Board adopts operating and capital budgets; rates, fees and charges schedules; and positions authorization.

**Implement:                Adopted rates, fees & charges, capital and operating budgets**

July                        Adopted rates and budget implementation begins.

Adopted Budget, and rates and charges schedules, published.

**Strategic Plan Update**

The Strategic Plan is updated every other year. This plan provides the District with overall direction for the next three to five years, sets priorities, and guides the development of the operating and capital budgets with those priorities.

**Mid-Cycle Budget Update**

The Board of Directors approves the budget covering a two-year period. The Board reviews and reaffirms the second year of the two-year budget prior to the start of a new fiscal year in July. A Mid-Cycle Budget Update workshop given to the Board of Directors provides a budget status and any projected changes to revenues, expenditures and staffing.

**Annual and Semi-Annual Budget Performance Reports**

At the mid-point and conclusion of each fiscal year, the Board of Directors is provided with a comparative analysis of expenditures to budget.

## **Budget Responsibilities**

Budget decisions are made through a process that involves the Board of Directors, District staff and the public. The responsibilities for financial management planning and budget control are as follows:

### **Departmental Responsibilities**

- Prepare capital improvement program and biennial budget requests;
- Monitor financial performance and take prompt corrective action, as needed;
- Monitor key performance indicators and take corrective action, as appropriate; and
- Inform the General Manager when unforeseen circumstances indicate that budget amounts may be exceeded or that expected revenues may be less than planned.

### **Finance Department Responsibilities**

#### Treasury Operations

- Monitor District's liquidity and ensure funds are available as needed, invest funds in accordance with Board policy, wire funds to pay approved demands, and take other actions associated with the prudent management of the District's financial resources;
- Provide for the issuance of debt to fund the capital improvement program; and
- Prepare financial projections, schedules of rates and charges, tax rate proposals and other financial materials.

#### Accounting

- Produce monthly and annual expenditure and revenue reports;
- Prepare and present information on financial trends to facilitate evaluation of the District's financial position and identify conditions requiring management attention; and
- Prepare periodic reports on the status of expenditures, revenues, investments and actions taken to ensure the financial stability of the District.

#### Budget Office

- Facilitate the development of the Strategic Plan;
- Project short-range and long-range financial needs, and recommend methods for meeting those needs;
- Prepare the District's biennial operations and capital improvement program budgets;
- Prepare budget performance reports on a monthly, quarterly, semi-annual and annual basis;
- Prepare the mid-cycle budget update;
- Develop procedures and controls to monitor and ensure compliance with the budget; and
- Assist departments throughout the year with their budgets and financial issues.

## **General Manager's Responsibilities**

- Review and present to the Board of Directors long range plans, budgets and revisions, schedules of rates and charges, payments of financial demands and other financial transactions, as necessary;
- Authorize budget transfers up to 5 percent of the fiscal years' budget between the operations and capital budgets in each of the Water and Wastewater System's budgets, provided that the total budget for each of the two systems remains unchanged;
- Authorize the allocation of budgeted funds from contingency; and
- Implement emergency financial procedures within approved limits, when necessary.

## **Budgetary Controls**

Automated District-wide budgetary controls track spending to the amounts set in the budget. Budgetary controls function differently for operations and capital budget expenditures.

For the operations budget, each department is controlled within each expenditure category: personnel costs, contract services, and operations and maintenance. Departments are not allowed to exceed their authorized operations budget for each fiscal year.

For the capital budget, each capital project is controlled based on its appropriation. A project may not exceed its total appropriation. Unlike the operations budget, which expires on June 30 of each fiscal year, capital appropriations are multi-year and will last the life of the project.

## **Budget Adjustments**

Adjustments to the operations budget are reallocations of funds between organizational units, categories, and/or line items, which allow departments to have financial flexibility within established budgetary controls. Budget adjustments to the capital budget are reallocations of funds within or between projects. Approval from the affected department(s) and the Budget Office is required for all budget adjustments.

General Manager approval is required for the reallocation of funds from contingency, and the reallocation of funds between the operations and capital budgets in both the Water and Wastewater Systems. Approval from the Board of Directors is required for increases to the total adopted budget of the Water or Wastewater System.



## **Capital Improvement Program Preparation**

The Capital Improvement Program (CIP) budget communicates the capital priorities of the District for the next five years to enable the District to identify and prioritize its infrastructure needs and plan for infrastructure investments.

The CIP consists of three primary levels:

The highest level of the CIP is a strategy, which groups several programs representing key capital objectives as identified in the EBMUD's Strategic Plan. The Water System and Wastewater System strategies are summarized in the Capital Expenditures sections of the Water System and Wastewater System chapters.

The second level in the CIP is a program, which represents a group of related projects combined to facilitate planning and decision-making. A discussion of the significant programs included in the CIP can be found in the CIP program highlights sections of the Water System and Wastewater System chapters.

The third level in the CIP is a project, which is a discrete set of capital improvement tasks, coordinated by a project manager. Appropriation requests and projected spending (cash flow) are authorized at the project level. A discussion of each project included in the CIP can be found in the supplemental volume of the budget document.

## **CIP Budget Preparation**

The CIP is prepared as part of the District's biennial budget process. The responsibilities for preparing and managing the CIP are shared among District staff as follows:

### **Project Management**

Project managers work together to meet the requirements of the biennial CIP budget process and to implement a specific program or project. During the budget process, the project managers update project appropriations and cash flows, and modify project descriptions and justifications to identify recent and anticipated major accomplishments. Managers also work together to identify the most effective ways to schedule, staff, and coordinate projects.

The steps used to budget for the CIP are:

- Propose and justify new capital projects needed to carry out the goals of the District;
- Identify how resources will be allocated to accomplish the work;
- Identify the required appropriation and estimated cash flow for each project; and
- Include direct costs (without overhead), contingency and an inflation factor in the recommended appropriations and cash flows for projects.

## **Capital Steering Committee (CSC)**

The CSC consists of Department Directors and Managers responsible for the overall management of the CIP during the budget preparation process.

Responsibilities include:

- Serve as an advisory group to the General Manager and the Budget Office;
- Review projects for opportunities to combine programs and projects, streamline costs, and determine the necessity for proposed new projects;
- Confirm the adequacy of District resources to complete proposed projects;
- Scrutinize proposed project cash flow amounts;
- Establish priorities and finalize the list of individual projects to be presented to the General Manager and Board of Directors based on available resources and project justification;
- Review the status of the CIP regularly;
- Work with project management staff to resolve administrative issues; and
- Authorize necessary changes to project scope, schedule and budget that are within staff's administrative authority.

## **Budget Office**

The office is responsible for the overall management of the budget process which includes:

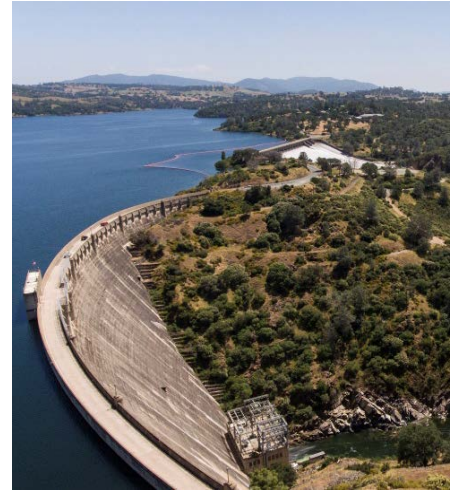
- Manage the CIP budget preparation and planning process;
- Provide staff support to the CSC;
- Ensure that the decisions of the CSC and General Manager are reflected in the budget;
- Determine types and levels of funding necessary for the CIP;
- Report to the General Manager and CSC the status of capital project appropriations and cash flow spending; and
- Report CSC recommendations regarding adjustments to the CIP that require either General Manager or Board approval.

## CHAPTER 2: DISTRICT BUDGET SUMMARY

This chapter provides a District-wide summary of the biennial budget including discussions of the following topics:

- Budget Appropriations
- Operations
- Debt Service
- Capital Improvement Program
- Staffing
- Labor and Benefits
- Sources of Funds
- Fund Summaries

Subsequent chapters describe in greater detail the budgets for each of the two distinct funds: Water and Wastewater.



*Pardee Dam*

### BUDGET APPROPRIATIONS

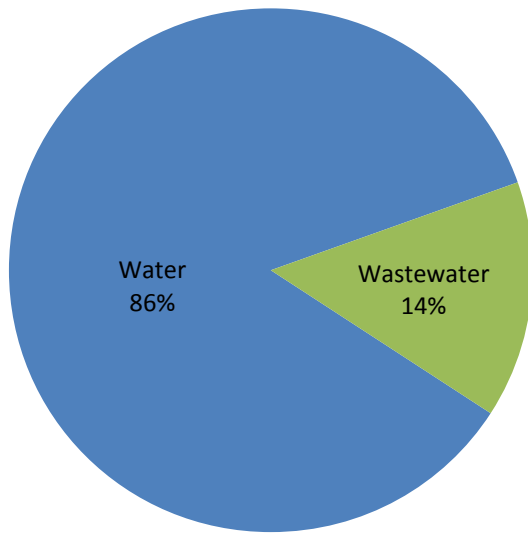
The FY20 District-wide total appropriation is \$1.31 billion for the water and wastewater systems, and \$1.04 billion in FY21. The appropriations are divided into three major categories:

- **Operations** associated with the annual cost of providing all water and wastewater services, labor and benefits;
- **Debt Service** on bonds issued to pay for the investments in infrastructure in the capital improvement program. Debt service is only incurred to support the capital program; and
- **Capital Appropriation** associated with projects to upgrade aging infrastructure, make seismic improvements, protect natural resources, and ensure a future water supply.

The following table shows the appropriations by major categories.

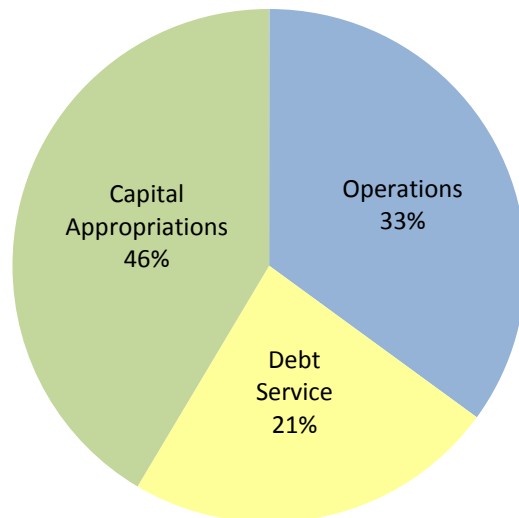
FY20 & FY21 APPROPRIATIONS (\$ Millions)							
	FY20			FY21			Grand Total
	Water	Wastewater	Total	Water	Wastewater	Total	
Operations	299.3	75.1	374.4	315.4	78.6	393.9	768.3
Debt Service	208.2	30.2	238.4	217.7	29.8	247.5	486.0
Capital Appropriation	<u>622.6</u>	<u>72.3</u>	<u>694.9</u>	<u>352.3</u>	<u>41.8</u>	<u>394.1</u>	<u>1,089.0</u>
<b>Total</b>	<b>1,130.1</b>	<b>177.6</b>	<b>1,307.7</b>	<b>885.4</b>	<b>150.2</b>	<b>1,035.6</b>	<b>2,343.3</b>

### Appropriations by System



Although the Water System serves 1.4 million customers, more than twice the 685,000 customers served by the Wastewater System, Water System appropriations are over six times those of Wastewater because of the overall scope and complexity of the Water System. Unlike many California water agencies, EBMUD owns its own water source and buys water only during a drought.

### Appropriations by Category



Capital investment activities, debt service and capital appropriations, represent two-thirds of the budget in FY20 and FY21.

## Budget Allocated By Services Provided

EBMUD's services include operating and maintaining an extensive infrastructure spanning more than 4,200 miles of pipeline, aqueducts, reservoirs, water treatment plants, protecting public health, and producing renewable energy at its wastewater plant. Other services include recreation, fishery restoration, water conservation, pollution prevention, and sustainability education programs for youth. The following table summarizes the FY20 and FY21 biennial budget by services provided.



*Lafayette Reservoir*

FY20 & FY21 APPROPRIATIONS BY SERVICES PROVIDED (\$ Millions)		
SERVICES	FY20	FY21
<b>Capital Improvement Program</b> Projects to upgrade aging infrastructure, protect natural resources, and provide high quality water and wastewater services. Projects typically result in the construction of new facilities, or the rehabilitation or upgrade of existing facilities.	694.9	394.1
<b>Debt Service</b> Expenditures for interest and principal repayment of bonds sold to pay for capital investments in infrastructure.	238.4	247.5
<b>Water Service</b> Operation and maintenance of facilities to store, treat and deliver high-quality water to 1.4 million customers including reservoirs, pipelines, and treatment plants; planning for future water supply; recycled water; and reading meters.	185.5	195.3
<b>Wastewater Service</b> Operation and maintenance of facilities to treat wastewater for 685,000 customers including sewer interceptors, the treatment plant, laboratory and wet weather facilities; and educational outreach to residences and businesses.	75.1	78.6
<b>Support Services</b> Human resources, finance, legal, information systems, and other internal support services.	72.1	76.2
<b>Customer Service</b> Water conservation programs, public information, school outreach, billing services, call center and additional services to customers.	24.0	25.4
<b>Natural Resource Management and Protection</b> Environmentally sound management of nearly 56,000 acres of watershed lands, operation of public recreation facilities and fisheries programs.	17.6	18.5
<b>TOTAL BUDGET APPROPRIATIONS</b>	<b>1,307.7</b>	<b>1,035.6</b>



## OPERATIONS

Operations are categorized by departments that carry out the day-to-day activities of the District and include appropriations for labor, contract services, fuel, chemicals, computer hardware, self-insured liability claims, etc. In addition, appropriations are budgeted for contingency to cover unanticipated needs and employee cost of living adjustments; intradistrict to ensure that for certain internal service accounts expenses are not duplicated in the budget such as vehicle expenses and warehouse overhead; and the administration of capital to capture costs that support, but are not directly attributable to capital projects. Administration of capital which is described in the Capital Improvement Program section is subtracted from operations and reallocated to the capital budget. Intradistrict expenses only impact the Water System and are also subtracted from operations.

The table below shows department operations within each system. Under the Water System, roughly half of the budget associated with conducting the District's day-to-day activities is under the Maintenance & Construction and the Water Operations Departments.

<b>FY20 &amp; FY21 DEPARTMENT OPERATIONS</b> (\$ Millions)			
	<b>FY20 Budget</b>	<b>FY21 Budget</b>	<b>% Chg</b>
<b>WATER SYSTEM</b>			
Maintenance & Construction	104.2	105.8	1.5%
Water Operations	55.7	56.6	1.6%
Information Systems	30.4	31.4	3.4%
Finance	26.5	27.2	2.5%
Customer & Community Services	22.7	23.3	2.2%
Operations & Maintenance Support	21.2	21.5	1.4%
Engineering & Construction	20.6	21.0	1.9%
Natural Resources	17.0	17.3	2.2%
Human Resources	11.8	11.8	-0.5%
Water Resources	8.9	8.9	-0.4%
Office of the General Manager	6.4	6.9	6.9%
Water Recycling Program	5.8	5.9	2.0%
Office of the General Counsel	4.9	4.9	0.3%
Administration	0.4	0.4	1.9%
<b>Staffed Departments</b>	<b>336.8</b>	<b>343.0</b>	<b>1.8%</b>
Contingency	14.5	25.0	-
Intradistrict	(12.0)	(12.6)	5.0%
Administration of Capital	(40.0)	(40.0)	0.0%
<b>TOTAL WATER SYSTEM</b>	<b>299.3</b>	<b>315.4</b>	<b>5.4%</b>
<b>WASTEWATER SYSTEM</b>			
Staffed Department	75.4	77.1	2.3%
Contingency	2.7	4.5	-
Administration of Capital	(3.0)	(3.0)	0.0%
<b>TOTAL WASTEWATER SYSTEM</b>	<b>75.1</b>	<b>78.6</b>	<b>4.6%</b>
<b>DISTRICT TOTAL</b>	<b>374.4</b>	<b>393.9</b>	<b>5.2%</b>

## DEBT SERVICE

Capital expenditures are typically funded through debt financing or on a “pay-as-you-go” basis. In some cases, capital expenditures can also be funded by reimbursements, grants or loans. Debt financing is generally suited to large capital projects with a long useful life and a significant cost. Debt financing also creates a measure of intergenerational equity in that future ratepayers will participate in the financing of the capital projects over their useful life. The “pay-as-you-go” option is a source of funding that utilizes current year revenues and supports long-term financial stability.

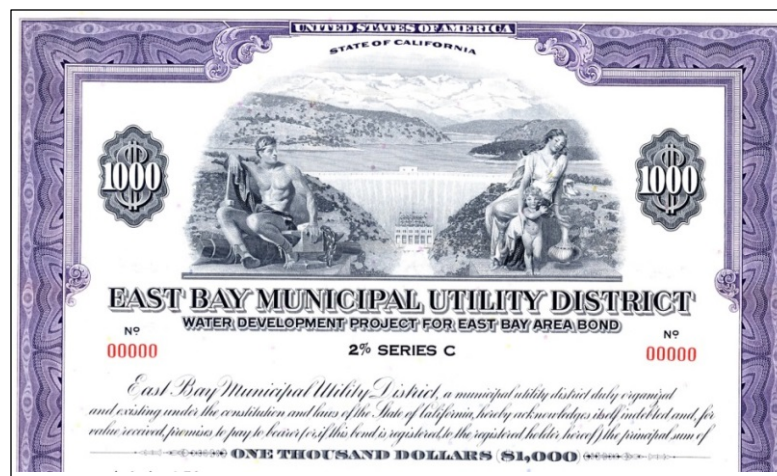
The District’s policy is that over any five-year planning period no more than 65 percent of the Capital Improvement Program (CIP) will be funded from debt. Prior biennial budgets, as well as this budget, support additional “pay-as-you-go” funding to reduce debt service costs. Although debt service payments are considered to be part of the operations budget, debt proceeds are used to finance capital investment activities.

The Water System utilizes more debt funding than the Wastewater System and almost half of the five-year FY20-24 Water System CIP will be funded by debt. Only 20 percent of the FY20-24 Wastewater CIP will be debt funded.

### FY20 & FY21 Debt Service and Bonds Issued

Debt service payments are made to pay the interest and principal on the bonds issued to fund a portion of the CIP. Debt service will be \$208.2 million in FY20 and \$217.7 million in FY21 for the Water System and \$30.2 million in FY20 and \$29.8 million in FY21 for the Wastewater System.

The Water System budget assumes issuance of \$204.5 million in new revenue bonds in FY20, and \$160.0 million in FY21. The Wastewater System budget assumes no new revenue bonds will be issued in FY20 and FY21. Total outstanding debt on the Water System is projected to be \$2.71 billion and \$384.7 million on the Wastewater System as of June 30, 2019.



Water Revenue Bond

## CAPITAL IMPROVEMENT PROGRAM

The Capital Improvement Program (CIP) identifies the District's capital needs over the next five years and prioritizes projects to rehabilitate, upgrade and replace aging infrastructure.

Capital appropriations are the amounts approved by the Board to be spent on capital projects, and may be expended over multiple years. Appropriations vary from year-to-year depending upon the funding needs of the projected work. Administration of capital consists of costs incurred by support functions that are not directly charged to individual capital projects, such as finance, human resources, and information systems. These costs support the CIP as a whole, and are deducted from the operations budget and included in the capital budget.

The FY20 capital appropriation totals \$694.9 million for the Water and Wastewater Systems, and \$394.1 million in FY21. The following table shows the annual appropriations for the five-year CIP, plus the administration of capital. The Board adopts the appropriations for the first two years of the CIP. The remaining years are for planning purposes only and are subject to revision. Almost 90 percent of the appropriations are associated with the Water System.



Field Crew

<b>Planned Capital Appropriations within Fund</b> (\$ Millions)						
	<b>FY20</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>Total</b>
Water	582.6	312.3	389.5	468.2	285.0	2,037.6
Administration of Capital	40.0	40.0	41.3	42.6	44.0	207.9
Water Total	622.6	352.3	430.8	510.8	329.0	2,245.5
Wastewater	69.3	38.8	30.9	60.7	70.9	270.6
Administration of Capital	3.0	3.0	3.1	3.2	3.3	15.6
Wastewater Total	72.3	41.8	34.0	63.9	74.2	286.2
<b>District Total</b>	<b>694.9</b>	<b>394.1</b>	<b>464.8</b>	<b>574.7</b>	<b>403.2</b>	<b>2,531.7</b>

Major capital project to be undertaken are shown below. These projects are further described in Chapter 3 and 4, in addition to the supplemental volume for this budget.

<b>Water System</b>	<b>Wastewater System</b>
Distribution Pipelines Replacement	Treatment Plant Infrastructure
Water Treatment Plant Upgrades	Digester Upgrades
Large Diameter Pipelines Replacement	3rd Street Sewer Interceptor Rehabilitation
Service Installations for New Customers	Resource Recovery Improvements
West of Hills Pipelines/Pumping Plants	Concrete Rehabilitation
Reservoir Rehabilitation	Capital Equipment Replacement
Service Lateral Replacements	Power Generation System Improvements
Raw Water System Improvements	Seismic Retrofits

## STAFFING

Departments look to add and delete positions based on operational need and for opportunities to restructure the workload as employees retire or leave the District. Staffing is shown by full-time equivalents (FTE). The FTE value varies depending upon the appointment type. Civil service, civil service exempt, limited-term, and temporary construction appointments are full-time and equivalent to 1.0 FTE. Intermittent appointments are equivalent to 0.75 FTE. Part-time and temporary appointments are equivalent to 0.5 FTE.

In FY20, the District will have 2,154.75 authorized FTE, with full-time civil service or full-time civil service exempt positions comprising over 95 percent of the workforce. The following shows the number of authorized FTEs for FY17 through FY21, as amended by Board actions. Over this five-year period, the number of authorized FTEs has increased over 85 or 4.1 percent.

<b>District Staffing</b> (Number of Authorized FTEs)					
<b>Appointment Type</b>	<b>FY17</b>	<b>FY18</b>	<b>FY19</b>	<b>FY20</b>	<b>FY21</b>
Full-Time Civil Service and C.S. Exempt	1,971.0	2,007.0	2,014.0	2,057.0	2,057.0
Limited-Term / Temporary Construction	56.0	65.0	65.0	62.0	60.0
Intermittent	3.0	3.0	3.0	3.75	3.75
Temporary / Part-Time	<u>37.5</u>	<u>33.0</u>	<u>33.0</u>	<u>32.0</u>	<u>32.0</u>
<b>Total Authorized FTEs</b>	<b>2,067.5</b>	<b>2,108.0</b>	<b>2,115.0</b>	<b>2,154.75</b>	<b>2,152.75</b>
FTE Change From Previous FY	0.0	40.5	7.0	39.75	(2.0)

Limited-Term / Temporary Construction category includes 12 FTEs requiring Drought Declaration.

### FY20 & FY21 Changes in FTE

Staffing changes will enable the District to address priority areas such as investments in and maintenance of aging water and wastewater infrastructure. The number of District-wide authorized FTE is increasing a net of 39.75 in FY20 through the addition of 54.75 FTEs and the deletion of 15.0 FTEs. In FY21, 2.0 FTEs will be deleted.

### Water System

The 54.75 FTEs added in FY20 will address:

- Pipeline Construction
- Infrastructure Maintenance / Investment
- Technology Infrastructure
- Human Resources

### Wastewater System

The Wastewater System is not adding or deleting any positions in FY20 or FY21, but will transfer one FTE to the Water System.

## LABOR AND BENEFITS



*Crew In Trench*

Budgeted labor includes all compensation such as wages, salaries, cost of living adjustments, and overtime. Benefits include the District's costs associated with retirement, health care, Social Security, and other programs such as disability and unemployment insurance. The District does not pay for the employee share of retirement contributions.

Depending upon the work being performed, labor and benefits are allocated to either operations or capital.

Typical duties performed by employees that charge to operations include pipeline system maintenance, meter maintenance, customer contact center support, human resources, managing watershed properties, information systems and treatment plant operations. Duties of employees that charge to capital include pumping plant rehabilitation, pipeline replacements, water treatment plant upgrades, wastewater plant improvements and reservoir rehabilitation.

The table below shows labor and benefits allocated between the operations and capital budgets. Of the total FY20 and FY21 budgets, approximately 73 percent of the District's labor and benefits budget is attributable to operations, and the remaining 27 percent to capital. Total labor and benefits are projected to increase 3.6 percent in FY20, and 5.1 percent in FY21. Benefits represent approximately 37.5 percent of the total District-wide labor budget.

<b>Labor and Benefits by Operations and Capital (\$ Millions)</b>					
	<b>FY19 Budget</b>	<b>FY20 Budget</b>	<b>% Chg</b>	<b>FY21 Budget</b>	<b>% Chg</b>
<b>Water</b>					
Operations	241.5	244.7	1.3%	256.3	4.7%
Capital	86.9	95.5	10.0%	101.5	6.2%
<b>Wastewater</b>					
Operations	44.3	46.3	4.5%	48.6	5.0%
Capital	10.7	10.8	1.0%	11.4	5.2%
<b>District-wide</b>					
Operations	285.8	290.9	1.8%	304.9	4.8%
Capital	97.6	106.4	9.0%	112.9	6.1%
<b>Total District</b>	<b>383.4</b>	<b>397.3</b>	<b>3.6%</b>	<b>417.8</b>	<b>5.1%</b>

Includes cost of living adjustment.

Excludes the Administration of Capital overhead allocated from Operations to Capital.

Increases in labor and benefit costs are primarily attributable to funding additional positions, and a cost of living adjustment. The majority of the additional positions are in the Water System to support capital projects, infrastructure maintenance, pipeline construction, operations support, and human resources. Several complex drivers impact the labor and benefits budget beyond funding additional positions such as a slower projected rise in benefit costs for retirement and health care.





*Employee Training*

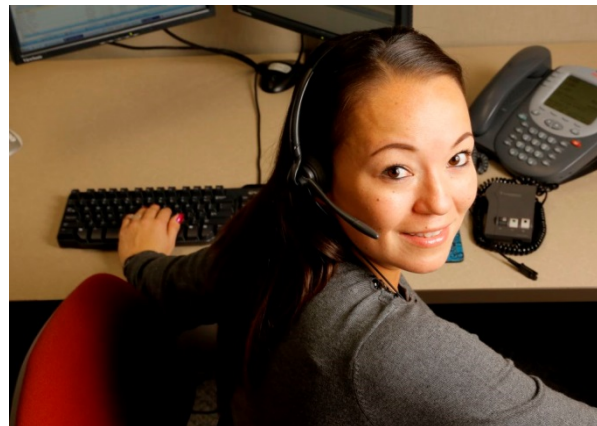
The FY20 and FY21 budget continues to build on past efforts to contain benefit costs. The benefits budget comprises several drivers, the largest is the employer pension contribution followed by the health care expense. In 2012, pursuant to state legislation referred to as the California Public Employees' Pension Reform Act (PEPRA), the Board of Directors implemented this change in the District's Employee Retirement System, referred to as the 2013 Plan. New employees receive a reduced pension benefit and fund a greater share of that benefit themselves. The assumption utilized for this budget projects a growth in the number of employees in the 2013 Plan thereby slowing the projected increase for this cost.

The following table shows the different employer pension contribution rates since FY18. Most new employees are part of the 2013 Plan and all other employees participate in the 1955/1980 Plan. The FY20 contribution rate remains

unchanged from the prior fiscal year. The actual FY21 rate will not be available until it is calculated by the actuary and adopted by the Retirement Board in 2020.

<b>Employer Pension Contribution Rates</b>			
<b>Plan</b>	<b>FY18</b>	<b>FY19</b>	<b>FY20</b>
1955/1980 Plan	37.92%	37.86%	37.86%
2013 Plan	31.30%	31.24%	31.24%

In the District's continuing pursuit of cost containment, changes were made to health benefit provider options starting in 2019. The fiscal impact of these changes is expected to slow the growth of health care costs projected for this biennial budget. The health benefit assumption utilized for this budget represents a cost increase of approximately 2 percent for FY20 and 6 percent for FY21.

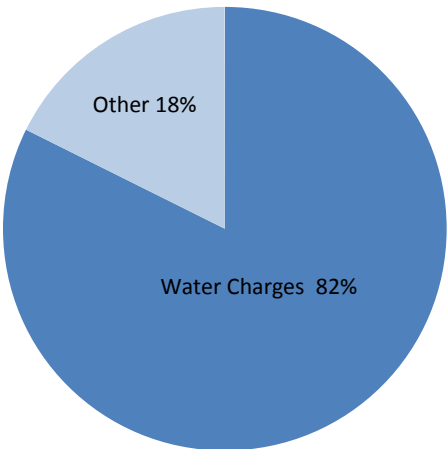


*Customer Service Representative*

# SOURCES OF FUNDS

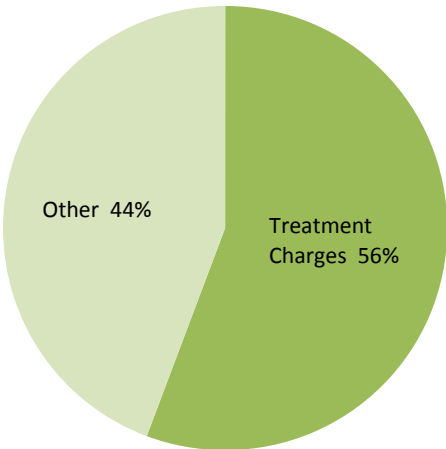
The principal source of Water System operating revenue is Water Charges which account for 82 percent of revenues, followed by System Capacity Charge (SCC) and property taxes. As such, Water System revenue is highly sensitive to changes in customer water use.

**FY20 & FY21 Water System Operating Revenue**  
(Total = \$1.37 Billion)



The principal source of Wastewater System operating revenue is Treatment Charges which account for 56 percent of revenues, followed by the Wet Weather Charge and Resource Recovery. The Wastewater System is not as sensitive to changes in customer water use as the Water System since Treatment Charges are a smaller percentage of overall Wastewater revenue.

**FY20 & FY21 Wastewater System Operating Revenue**  
(Total = \$284.6 Million)



## WATER AND WASTEWATER SYSTEM FUND SUMMARIES

The following tables summarize the beginning and ending Water System and Wastewater System fund balance based on projected sources and use of funds.

<b>FUND SUMMARIES BY OPERATING AND CAPITAL (\$ Millions)</b>						
	<b>FY20</b>			<b>FY21</b>		
	<b>Operating</b>	<b>Capital</b>	<b>Balance</b>	<b>Operating</b>	<b>Capital</b>	<b>Balance</b>
<b>WATER SYSTEM</b>						
<b>Beginning Balance (Projected)</b>	<b>332.8</b>	<b>0.0</b>	<b>332.8</b>	<b>383.2</b>	<b>0.0</b>	<b>383.2</b>
<b>Sources of Funds</b>						
Operating Revenues	663.2		663.2	703.9		703.9
Capital Sources		232.4	232.4		188.5	188.5
Revenue Funded Capital	(105.4)	105.4	-	(197.0)	197.0	-
<b>Total Sources of Funds</b>	<b>557.9</b>	<b>337.8</b>	<b>895.6</b>	<b>506.9</b>	<b>385.5</b>	<b>892.4</b>
<b>Use of Funds</b>						
Operations	299.3		299.3	315.4		315.4
Debt Service	208.2		208.2	217.7		217.7
Capital Cash Flow	-	337.8	337.8	-	385.5	385.5
<b>Total Use of Funds</b>	<b>507.5</b>	<b>337.8</b>	<b>845.3</b>	<b>533.1</b>	<b>385.5</b>	<b>918.6</b>
<b>Ending Balance *</b>	<b>383.2</b>	<b>0.0</b>	<b>383.2</b>	<b>357.0</b>	<b>0.0</b>	<b>357.0</b>
<b>WASTEWATER SYSTEM</b>						
<b>Beginning Balance (Projected)</b>	<b>103.0</b>	<b>0.0</b>	<b>103.0</b>	<b>89.4</b>	<b>0.0</b>	<b>89.4</b>
<b>Sources of Funds</b>						
Operating Revenues	140.2		140.2	144.4		144.4
Capital Sources		-	-		-	-
Revenue Funded Capital	(48.5)	48.5	-	(46.0)	46.0	-
<b>Total Sources of Funds</b>	<b>91.7</b>	<b>48.5</b>	<b>140.2</b>	<b>98.4</b>	<b>46.0</b>	<b>144.4</b>
<b>Use of Funds</b>						
Operations	75.1		75.1	78.6		78.6
Debt Service	30.2		30.2	29.8		29.8
Capital Cash Flow	-	48.5	48.5	-	46.0	46.0
<b>Total Use of Funds</b>	<b>105.3</b>	<b>48.5</b>	<b>153.8</b>	<b>108.4</b>	<b>46.0</b>	<b>154.4</b>
<b>Ending Balance *</b>	<b>89.4</b>	<b>0.0</b>	<b>89.4</b>	<b>79.4</b>	<b>0.0</b>	<b>79.4</b>

\* Includes reserves for working capital, self-insurance, worker's compensation, contingency, rate stabilization, and capital projects.

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## CHAPTER 3: WATER SYSTEM

This chapter provides a detailed description of the Water System including discussions of the following topics:

- Fund Summary
- Sources of Funds
- Use of Funds
- Staffed Department Operations
- Debt Service and Financing
- Capital Improvement Program
- Five-Year Financial Forecast

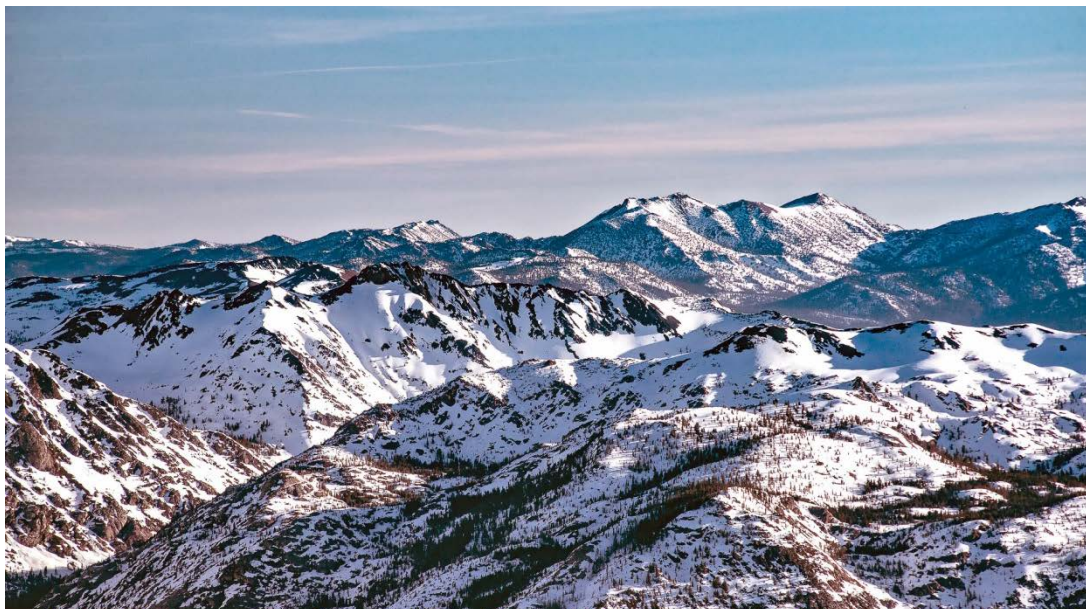


*Lafayette Reservoir*

The Water System is an enterprise fund consisting of an operating and a capital budget. The function of the Water System is to collect, transmit, and distribute water to communities within Alameda and Contra Costa Counties. In addition, the Water System provides administrative, financial, and other support services to the Wastewater System. These costs are charged to the Wastewater System.

The following are key projections and assumptions utilized in the FY20 and FY21 budget.

Water System Fund – Key Assumptions		
	FY20	FY21
Water Sales Volume (mgd)	141.0	143.0
% Rate Increase	6.50%	6.25%
Average monthly single family residential bill based on 8 ccf/month	\$59.74	\$63.47



*Watershed Snow*



## FUND SUMMARY

The fund summary illustrates the beginning and ending fund balances as well as revenues, expenditures, and other financing sources/uses. The following table shows the fund balance, and projected revenues and expenditures for the Water System for FY20 and FY21.

<b>Water System Fund Summary</b> <b>Operating and Capital Budgets (\$ Millions)</b>						
	FY20			FY21		
	Operating	Capital	Balance	Operating	Capital	Balance
<b>Beginning Balance (Projected)</b>	<b>332.8</b>	<b>0.0</b>	<b>332.8</b>	<b>383.2</b>	<b>0.0</b>	<b>383.2</b>
<b>Sources of Funds</b>						
<b>Operating Revenues</b>						
Water Charges	543.5		543.5	582.5		582.5
Property Taxes	35.0		35.0	35.8		35.8
Power Sales	5.0		5.0	5.0		5.0
Interest Income	9.3		9.3	9.6		9.6
SCC Revenue	40.0		40.0	40.0		40.0
Reimbursements	12.3		12.3	12.6		12.6
All Other Revenue	<u>18.2</u>		<u>18.2</u>	<u>18.4</u>		<u>18.4</u>
<b>Total Operating Revenues</b>	663.2		663.2	703.9		703.9
<b>Capital Funding Sources</b>						
New Bond Proceeds		200.4	200.4		156.8	156.8
Loans Proceeds		-	-		-	-
Grants		-	-		-	-
Reimbursements		32.0	32.0		31.7	31.7
Commercial Paper		<u>-</u>	<u>-</u>		<u>-</u>	<u>-</u>
<b>Total Capital Sources</b>		232.4	232.4		188.5	188.5
Revenue Funded Capital	<u>(105.4)</u>	<u>105.4</u>	<u>-</u>	<u>(197.0)</u>	<u>197.0</u>	<u>-</u>
<b>Total Sources of Funds</b>	<b>557.9</b>	<b>337.7</b>	<b>895.6</b>	<b>506.9</b>	<b>385.5</b>	<b>892.4</b>
<b>Use of Funds</b>						
Operations	299.3		299.3	315.4		315.4
Debt Service	208.2		208.2	217.7		217.7
Capital Cash Flow	<u>-</u>	<u>337.7</u>	<u>337.7</u>	<u>-</u>	<u>385.5</u>	<u>385.5</u>
<b>Total Use of Funds</b>	<b>507.5</b>	<b>337.7</b>	<b>845.2</b>	<b>533.1</b>	<b>385.5</b>	<b>918.6</b>
<b>Ending Balance *</b>	<b>383.2</b>	<b>0.0</b>	<b>383.2</b>	<b>357.0</b>	<b>0.0</b>	<b>357.0</b>

\* Includes reserves for working capital, self-insurance, worker's compensation, contingency, rate stabilization, and capital projects.

## SOURCES OF FUNDS

The Water System has a variety of revenue sources that are used to fund operations, and a portion of the capital expense. The remaining capital expense is funded primarily by bonds and reimbursements.

The table below displays FY18 actuals, FY19 budget, and projections for operating revenue and capital funding sources.

<b>Water System Sources of Funds</b> (\$ Millions)				
	<b>FY18 Actuals</b>	<b>FY19 Budget</b>	<b>FY20 Budget</b>	<b>FY21 Budget</b>
<b>Operating Revenues</b>				
Water Charges	480.8	507.5	543.5	582.5
Property Taxes	34.7	30.7	35.0	35.8
Power Sales	7.0	3.7	5.0	5.0
Interest Income	7.5	7.4	9.3	9.6
SCC Revenue	69.3	28.0	40.0	40.0
Reimbursements	11.7	11.9	12.3	12.6
All Other Revenue	19.8	18.1	18.2	18.4
<b>Total Operating Revenues</b>	<b>630.7</b>	<b>607.2</b>	<b>663.2</b>	<b>703.9</b>
Revenue Funded Capital	(115.3)	(101.1)	(105.4)	(197.0)
<b>Capital Funding Sources</b>				
Revenue Funded Capital	115.3	101.1	105.4	197.0
New Bond Proceeds	176	148.6	200.4	156.8
Loans Proceeds	-	-	-	-
Grants	2.8	0.3	0.0	0.0
Reimbursements	15.5	19.9	32.0	31.7
Commercial Paper	-	-	-	-
Construction Fund	-	-	-	-
<b>Total Capital Funding Sources</b>	<b>309.5</b>	<b>269.8</b>	<b>337.7</b>	<b>385.5</b>
<b>Total Water Sources</b>	<b>824.9</b>	<b>776.0</b>	<b>895.6</b>	<b>892.4</b>

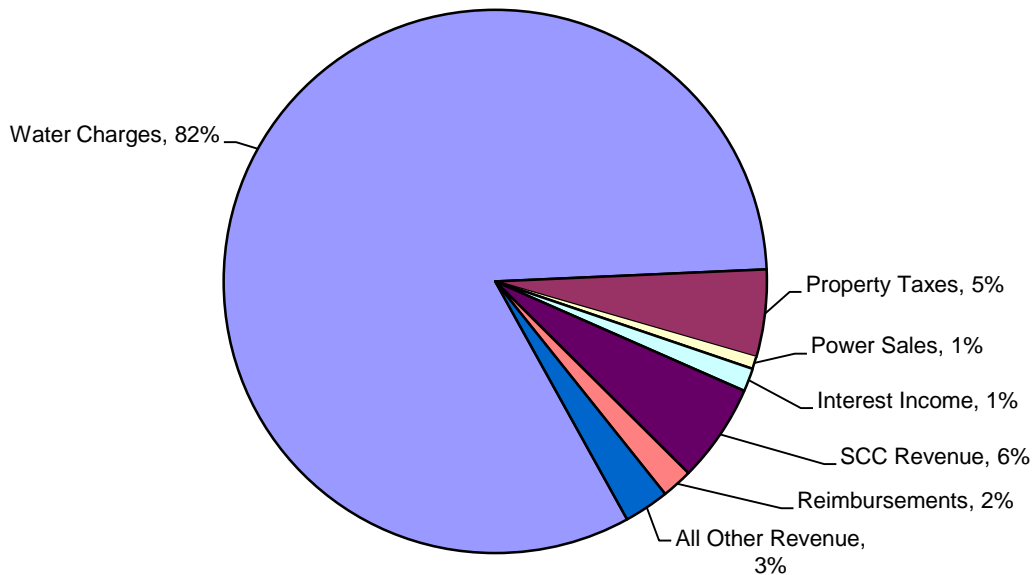
## Operating Revenue

In FY20, Water System operating revenues are budgeted to increase \$56.0 million, or 9.2 percent compared to FY19 for a total of \$663.2 million. This increase is based on FY20 water sales remaining at the FY19 budgeted level of 141.0 million gallons per day (MGD), but reflects a rate increase of 6.50 percent. The FY20 budget also includes increases over the last budget in SCC revenue of \$12.0 million, Property Taxes of \$4.3 million, and small increases in Interest Income, Power Sales, Reimbursements, and All Other.

In FY21, Water System operating revenues are budgeted to increase \$40.7 million, or 6.1 percent for a total of \$703.9 million. This increase is comprised primarily of \$39.0 million from Water Charges due to higher projected consumption of 143.0 MGD and the 6.25 percent increase in the water rates.

The figure below illustrates the various sources of revenue and the percentage each contributes to the total. Water Charges revenue is the largest source of revenue for EBMUD comprising 82 percent of FY20 and FY21 total operating revenue.

**FY20 & FY21 Water System Operating Revenue**  
(Total = \$1.37 Billion)



## Operating Revenue Descriptions

The following are descriptions of the sources of operating revenue, including information about the projected revenues for FY20 and FY21.

### Water Charges

Water Charges consist of a monthly service charge, a volume charge for the amount of water used and an elevation charge for those customers located at higher elevations that require pumping and additional storage facilities. The Water Charges increase 6.50 percent in FY20 and an additional 6.25 percent in FY21.

FY20 Revenue (\$ Millions)			FY21 Revenue (\$ Millions)		
	<u>Amount</u>	<u>% of Total</u>		<u>Amount</u>	<u>% of Total</u>
Monthly Service Charge	160.0	29.4	Monthly Service Charge	170.4	29.3
Volume Charge	355.1	65.3	Volume Charge	381.6	65.5
Elevation Charge	28.4	5.2	Elevation Charge	30.5	5.2
<b>Total</b>	<b>543.5</b>	<b>100.0</b>	<b>Total</b>	<b>582.5</b>	<b>100.0</b>

FY20 Water Charges are projected to increase \$36.0 million, for a total of \$543.5 million, or 7.1 percent over the FY19 budgeted Water Charges revenue, based on a 6.50 percent rate increase. FY21 Water Charges are projected to increase \$39.0 million, for a total of \$582.5 million, or 7.2 percent over FY20 Water Charges revenue as projected consumption increases slightly from 141 MGD to 143 MGD, and a rate increase of 6.25 percent.

### Property Taxes

The District receives a portion of the 1 percent county tax levy on properties within District boundaries. The District's share averages 1.25 percent of the total monies collected. For FY20, budgeted Property Tax revenue of \$35.0 million is based upon FY18 actual property tax receipts. The FY21 projections is \$35.8 million or a 2.3 percent increase.

### Power Sales

The District operates hydroelectric power generation facilities at the Pardee and Camanche Dams. For FY20 and FY21, projecting normal precipitation, the District expects to earn approximately \$5.0 million for each year, primarily from sales of power to other agencies.

### Interest Income

The District places funds not needed for current expenditures in short-term investments in accordance with the District's investment policy and may include money market funds, commercial paper, medium-term corporate notes, and short-term U.S. government securities. Interest earned on these funds in FY20 is projected to be \$9.3 million, a \$1.9 million increase from FY19 due to higher interest rates than the 2.0 percent assumed for the FY19 budget. For FY21 Interest Income is projected to be \$9.6 million, a \$0.3 million increase over FY20. Interest earned is assumed to be 2.5 percent in FY20 and FY21.

**SCC Revenue**

System Capacity Charges (SCC) are collected from customers requesting new water service. The charges are designed to recover costs of facilities necessary to serve new customers. These costs include distribution and treatment facilities, facilities that serve the system as a whole such as Pardee and Camanche Reservoirs, terminal storage reservoirs, administrative facilities, and a portion of the costs of supplemental water supply. The purpose of the SCC is to assure that existing customers do not bear the cost of customer growth and that new customers pay for their appropriate share of the existing water system facilities. Funds collected from the SCC are held either in dedicated reserves or accounted for as a capital contribution from developers. Funds held in the dedicated reserve account are used to pay the debt service for the bonds issued to build supplemental water supply projects.

SCC revenue for FY20 and FY21 is projected at \$40.0 million each year, which is a \$12.0 million increase from the amount budgeted for FY19. Due to the increase in building activity in the service area, the SCC revenue collected has been over \$50.0 million in each of the past three years. The budgeted SCC revenue of \$40.0 million assumes that the level of building activity will remain higher than normal, but below the trend of the past three years.

**Reimbursements**

The Water System receives reimbursement for services provided to other agencies. The Wastewater System reimburses the Water System for administrative costs, space rental in the Administration Building and for providing billing and collection services. The Water System also receives reimbursements from several cities for providing billing and collection services for the cities' sewer charges. Total reimbursements for FY20 and FY21 are projected at \$12.3 million and \$12.6 million respectively.

**All Other Revenue**

Included in this category are receipts from property sales, rental of District properties, fees for use of District recreational lands and facilities, insurance and property damage reimbursements, sales of surplus District equipment and vehicles, sales of District publications, reimbursements from the U.S. Treasury under the Build America Bonds program, reimbursement of operating expenses from the Richmond Advanced Recycled Expansion (RARE) project and other miscellaneous revenues. All Other revenues are projected at \$18.2 million for FY20 and \$18.4 million for FY21.



## **Capital Funding**

The following are descriptions of the sources of capital funding. The Capital Improvement Program (CIP) will be funded with bond proceeds, water revenues, reimbursements, and grants. It is anticipated that the District will receive \$200.4 million in new revenue bond proceeds in FY20 and \$156.8 million in FY21, combined with revenue funded capital of \$105.4 million in FY20 and \$197.0 million in FY21.

### **New Bond Proceeds**

The District has the ability to issue long-term bonds to fund its capital program. The proceeds of the bond sales can be used to pay for capital expenses over several years. The repayment of the bonds is generally over 30 years and is made from water rate revenues.

### **Commercial Paper Issues**

In addition to issuing long-term bonds, the District has used short-term borrowing in the form of commercial paper to raise revenues for capital expenses. The term of commercial paper can be up to 270 days. The repayment of commercial paper is made from water rate revenues.

### **Grants and Loans Proceeds**

The District pursues federal and state grants and low-interest loans to fund some of its capital projects when they meet the conditions of the District's grant and loan programs.

### **Reimbursements**

Some of the capital projects in the Water System are performed at the request of other agencies, and the District is reimbursed for its expenses. An example would be the relocation of a water main at the request of a city or state agency. Also, work to expand the distribution system to meet new connections not covered by the System Capacity Charge is paid for directly by the applicants.

### **Revenue Funded Capital**

Annual capital expenses that are not paid from debt funding, grants, loans or reimbursements are paid from operating revenues, either from current year revenues or from reserves.

Please refer to the section on Debt Service and Financing for additional details on debt funding of capital projects.

## USE OF FUNDS

The Water System has three types of expenditures:

**Operations**, or the annual costs of providing all water services;

**Debt service**, or the repayment of bonds for making capital investments in the water system; and

**Capital cash flow**, or the annual costs of the CIP for long-term projects.

The following table shows the breakdown of expenses for operations, debt service, and capital cash flow.

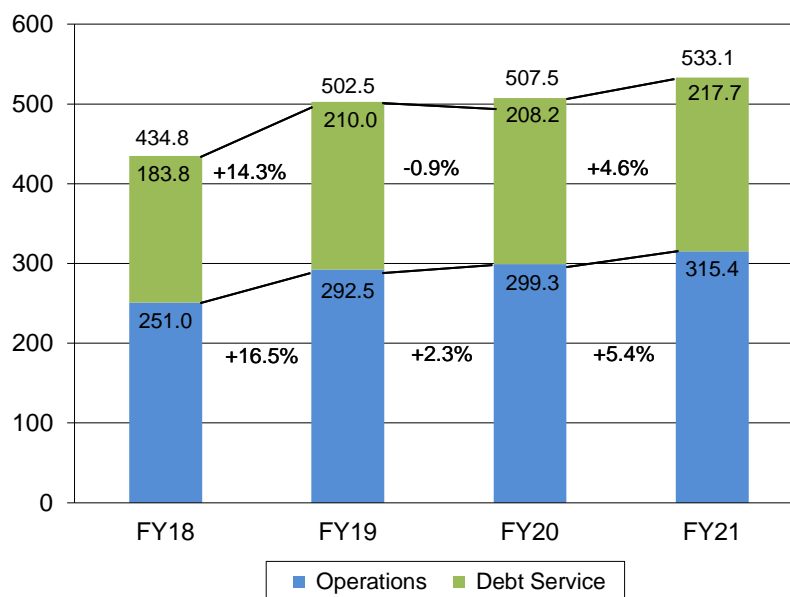
Use of Funds (\$ Millions)				
Expenditure Type	FY18 Actuals	FY19 Budget	FY20 Budget	FY21 Budget
Operations	251.0	292.5	299.3	315.4
Debt Service	183.8	210.0	208.2	217.7
Capital Cash Flow	<u>309.4</u>	<u>269.8</u>	<u>337.7</u>	<u>385.5</u>
<b>Total Expenditures</b>	<b>744.2</b>	<b>772.3</b>	<b>845.2</b>	<b>918.6</b>

## Operating Budget

This section contains charts and tables which explain the major components of the Water System operations budget. Typical operations expenditures include, but are not limited to labor, benefits, chemicals, energy, parts, materials, insurance, District vehicle fleet costs, and computer hardware and software.

In FY20, the operations and debt service budget is increasing \$5.0 million or 1.0 percent over the FY19 budget, and in FY21 will increase \$25.6 million or 5.0 percent as shown below.

**FY18-FY21 Operations and Debt Service**  
(\$ Millions)



The operations budget is also shown by department on the following pages.

## Department Operating Budgets

The operations portion of the Water System budget is divided into various departments. The majority of these departments are referred to as staffed departments indicating employees are assigned to work in these areas. The staffed department budget funds the day-to-day operations of the District, and includes funding for labor, benefits, outside contract services and other non-labor expenses such as electricity, chemicals, fuel, computer hardware, self-insured liability claims, and workers compensation claims. A detailed description of each staffed department is included later in this chapter.

A small number of departments do not have personnel assigned to them and are referred to as non-staffed departments. The impact on the budget by each of the following non-staffed departments varies:

**Contingency** – Funds are budgeted each fiscal year to cover projected labor-related expenses such as the employee cost of living adjustment which is based upon each year's February Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W) in the San Francisco-Oakland-Hayward area. The contingency budget also includes funding for unanticipated needs which may arise before the next budget cycle.

**Intradistrict** - Certain internal service accounts are included in balance sheets to assure that internal expenses are not counted twice within the operations budget. Examples of these accounts include warehouse stores overhead and fleet vehicle expenses.

**Administration of Capital** - The administration of capital represents those costs that are not directly attributable to specific capital projects, but indirectly support the CIP. The administration of capital in the operations budget will decrease operating expense by a like amount and reallocate the costs to the capital budget.

The following table presents the total FY20 and FY21 Water System operating budget by department.

<b>Operating Budget by Department (\$ Millions)</b>						
<b>Departments</b>	<b>FY18 Actuals</b>	<b>FY19 Budget</b>	<b>FY20 Budget</b>	<b>% Chg</b>	<b>FY21 Budget</b>	<b>% Chg</b>
Operations & Maint Support	20.4	20.4	21.2	4.0%	21.5	1.4%
Maintenance and Construction	99.5	107.8	104.2	-3.3%	105.8	1.5%
Water Operations	52.4	58.0	55.7	-4.1%	56.6	1.6%
Water Resources	8.2	9.0	8.9	-1.1%	8.9	-0.4%
Natural Resources	15.8	16.8	17.0	1.0%	17.3	2.2%
Engineering & Construction	17.5	20.1	20.6	2.4%	21.0	1.9%
Office of the General Manager	5.6	6.8	6.4	-5.2%	6.9	6.9%
Finance	22.9	29.5	26.5	-10.2%	27.2	2.5%
Information Systems	28.2	30.7	30.4	-0.8%	31.4	3.4%
Customer & Community Services	19.9	22.1	22.7	3.1%	23.3	2.2%
Human Resources	10.5	12.0	11.8	-1.0%	11.8	-0.5%
Office of the General Counsel	4.4	4.9	4.9	-0.2%	4.9	0.3%
Water Recycling Program	4.4	5.6	5.8	3.1%	5.9	2.0%
Administration	0.3	0.4	0.4	5.1%	0.4	1.9%
<b>Staffed Departments</b>	<b>310.1</b>	<b>344.2</b>	<b>336.8</b>	<b>-2.2%</b>	<b>343.0</b>	<b>1.8%</b>
Contingency	1.5	(0.1)	14.5	-	25.0	-
Intradistrict	(12.5)	(11.7)	(12.0)	2.3%	(12.6)	5.0%
Administration of Capital	(48.1)	(40.0)	(40.0)	0.0%	(40.0)	0.0%
<b>Operations</b>	<b>251.0</b>	<b>292.5</b>	<b>299.3</b>	<b>2.3%</b>	<b>315.4</b>	<b>5.4%</b>
Debt Service	183.8	210.0	208.2	-0.9%	217.7	4.6%
<b>Total Operating</b>	<b>434.8</b>	<b>502.5</b>	<b>507.5</b>	<b>1.0%</b>	<b>533.1</b>	<b>5.0%</b>



## Department Operations Budget Highlights

The Water System comprises 14 staffed departments that perform and provide operations, and also support functions for the Wastewater System. This section details the various departments including the labor and non-labor budgets, department goals and staffing.

The table below is a summary of the Water System departments' budgets, which excludes the administration of capital overhead allocated from operations to capital.

<b>Category</b> (\$ Thousands)	<b>FY18 Actuals</b>	<b>FY19 Budget</b>	<b>FY20 Budget</b>	<b>% Chg</b>	<b>FY21 Budget</b>	<b>% Chg</b>
Total Labor and Benefits	296,113	326,544	323,754	-0.9%	328,114	1.3%
Less: Capital Labor and Benefits	<u>(80,813)</u>	<u>(86,875)</u>	<u>(91,470)</u>	5.3%	<u>(93,660)</u>	2.4%
Operating Labor and Benefits	215,300	239,669	232,284	-3.1%	234,454	0.9%
Contract Services	16,701	19,281	19,510	1.2%	19,397	-0.6%
Other Costs	<u>78,078</u>	<u>85,271</u>	<u>84,959</u>	-0.4%	<u>89,126</u>	4.9%
<b>Operating Total</b>	310,078	344,221	336,754	-2.2%	342,977	1.8%

### Labor and Benefits

Labor and benefits are allocated between the staffed departments and contingency for cost of living adjustments. Cost of living adjustments are not shown in the staffed departments' FY20 and FY21 labor and benefits budgets since it is based on the CPI-W index and the amount is not known until the index is published annually. Once the index is published, and if funds are needed, contingency would be transferred to departments. The details of the departments' labor and benefits budget are shown later in this chapter.

Additional positions have been funded over the prior biennial budget. The positions support capital projects and operations work such as infrastructure maintenance, ramp-up of pipeline construction, and support functions such as human resources and finance to replace aging financial and human resource information systems. While additional positions have been funded in FY20, total labor and benefit costs decrease \$2.8 million or 0.9 percent due to a number of complex drivers that offset the labor and benefits budget. These offsets include:

- A slower projected rise in retirement and healthcare costs which impact benefit costs,
- Projected savings to account for the time required to fill positions given the number of retirements, additional positions and the recruitment lead time,
- Overall lower salaries in comparison to the prior biennial budget due to the significant number of new employees with salaries lower than the employees they replaced, and
- Lower projected overtime costs.

In FY21, total labor and benefit costs increase \$4.4 million or 1.3 percent compared to FY20 primarily for funding additional positions compared to FY20, scheduled step increases, and slightly higher overtime costs.

## Non-Labor

In FY20, staffed department non-labor costs are budgeted to decrease \$0.08 million or less than 1 percent compared to the prior fiscal year. The major drivers accounting for the change include:

- Energy costs are budgeted to increase \$1.4 million due to new tariffs and increased water production; and
- Software costs are budgeted to increase \$0.5 million primarily for specialized software used by the Engineering and Construction Department, and database license fees.

Planned reductions largely offset the anticipated increases in FY20:

- Computer hardware and equipment are budgeted to decrease \$1.2 million due to the equipment replacement fund which will be used for such purchases; and
- Professional services are budgeted to decrease \$0.8 million due to completion of the school Lead Sampling Program contract totaling \$1.5 million.

In FY21, staffed department non-labor costs are budgeted to increase \$4.0 million or 3.9 percent compared to FY20. The major drivers accounting for the change include:

- Fees and licenses are budgeted to increase \$0.7 million primarily for Board election fees in the second year and recycled water discharge fees;
- Computer hardware is budgeted to increase \$0.6 million for replenishing the equipment replacement fund for future equipment replacement needs;
- Computer software is budgeted to increase \$0.5 million for upgrading Microsoft Office software;
- Energy costs are budgeted to increase \$0.5 million primarily due to increased water production;
- Vehicle use charges are budgeted to increase \$0.3 million for operating and maintenance costs associated with fleet vehicles and equipment;
- Allowance for self-insured liability and worker's compensation claims are budgeted to increase \$0.3 million consistent with prior multi-year trends;
- Laboratory services are budgeted to increase \$0.2 million for the Water System's share of the costs of additional improvements to the laboratory and computer system;
- Mailing costs are budgeted to increase \$0.2 million primarily due to Prop 218 notices in the second year;
- Chemicals are budgeted to increase \$0.1 million primarily due to higher production and inflation;
- Security is budgeted to increase \$0.1 million due to scheduled annual contract changes; and
- Fuel is budgeted to increase \$0.1 million due to addition of vehicles to the fleet and anticipated price change.

Planned reductions related to equipment, outside services and professional services offset a small portion of the anticipated increases in FY21.

## Department Operations by Budget Category

The table below depicts the Water System staffed departments operations by expense category. It does not include capital labor; however, capital labor by department is shown later in this chapter.

FY20 & FY21 Department Operations by Categories (\$ Millions)										
Department	FY20					FY21				
	Labor	Contr	Svc	Other	Total	Labor	Contr	Svc	Other	Total
Operations & Maint Support	11.2	4.2	5.8	21.2		11.2	4.2	6.1	21.5	
Maintenance and Construction	75.3	3.8	25.2	104.2		76.1	3.6	26.1	105.8	
Water Operations	32.0	1.1	22.5	55.7		32.2	1.2	23.2	56.6	
Water Resources	6.7	0.4	1.8	8.9		6.8	0.3	1.8	8.9	
Natural Resources	10.3	3.1	3.6	17.0		10.5	3.1	3.7	17.3	
Engineering & Construction	19.1	0.2	1.4	20.6		19.5	0.2	1.4	21.0	
Office of the General Manager	5.6	0.2	0.6	6.4		5.6	0.1	1.1	6.9	
Finance	16.5	1.4	8.7	26.5		16.6	1.4	9.1	27.2	
Information Systems	21.0	2.3	7.1	30.4		21.2	2.2	8.1	31.4	
Customer & Community Svcs	19.5	0.3	3.0	22.7		19.9	0.4	3.0	23.3	
Human Resources	9.3	1.8	0.8	11.8		9.2	1.7	0.9	11.8	
Office of the General Counsel	4.0	0.8	0.2	4.9		4.0	0.8	0.2	4.9	
Water Recycling Program	1.8	0.1	3.9	5.8		1.8	0.1	4.0	5.9	
Administration	-	-	0.4	0.4		-	-	0.4	0.4	
Total	232.3	19.5	85.0	336.8		234.5	19.4	89.1	343.0	

## STAFFED DEPARTMENT OPERATIONS

This section describes each of the staffed departments and includes the following topics:

**Overview** provides an overall statement about the key responsibilities of the department within the larger mission of the District as a whole.

**Description of Services Provided** describes the responsibilities of the department, by unit (division) or by function, including services required to meet regulatory or legal requirements.

**FY20 & FY21 Goals** highlight the highest priority tasks or projects related to the budget, and the District Strategic Plan.

**Department Budget Summary** is a reference table that shows the Department's operating budget expenditures by category (Labor and Benefits, Contract Services, Other Costs). It also includes capital labor to detail a more comprehensive view of the departmental budgets.

**Budget Highlights** shows changes in cost relative to the previous fiscal year and describes reasons for those changes. This section focuses on the significant budget changes.

**Staffing Summary** is a reference table that shows the Full-Time Equivalent (FTE) for the department by appointment type (full-time, part-time, etc.).

**Staffing Changes** is a section included only if departments have position changes that require Board approval. It includes a table that enumerates position changes, followed by a brief description of the changes. The change in cost is determined by comparing the annual cost of the salaries and benefits of the current classification with the annual cost of the new classification at the top salary step.

The following guide lists each department by name, the divisions within each department, and includes the page number to locate each department in this chapter.

## Water System Departments and Divisions

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## **OPERATIONS AND MAINTENANCE SUPPORT DEPARTMENT (OSD)**

### **OVERVIEW**

The Operations and Maintenance Support Department is responsible for managing and improving the operational information systems, water system infrastructure, processes and assets, and providing District-wide support and leadership in regulatory compliance, emergency preparedness, business continuity, and facility security.

### **DESCRIPTION OF SERVICES PROVIDED**

The department includes the Regulatory Compliance Office, Water Quality Office, and Asset Management Division. The Regulatory Compliance Office provides environmental compliance guidance and assistance, security services, emergency preparedness support, and workplace health and safety support to the entire District. The Water Quality Office provides technical review and oversight of water quality issues at the treatment plants and in the distribution system, as well as review of upcoming legislative and regulatory changes that may impact water quality. The Asset Management Division develops and maintains work management systems and tools, including mobile and GIS technologies for field operations and staff; coordinates technical training and educational programs for department staff; and provides leadership and guidance for knowledge retention efforts.

### **FY20 & FY21 GOALS**

The department has primary responsibility for leading the Water Quality and Environmental Protection Strategic Plan goal. Key department goals include:

- Ensuring compliance with water discharge, air emission, and land disposal requirements to protect and preserve the environment;
- Supporting the accelerated pipeline infrastructure renewal capital program;
- Providing technical input and guidance in the development of the CIP for the water treatment plants (WTPs);
- Reviewing water quality data on a regular basis and assessing strategies for improvements;
- Operating and maintaining District facilities to anticipate and meet all water discharge, air emission, and land disposal regulations to protect and preserve the environment;
- Minimizing impacts to the environment by reducing, recycling, reusing and reclaiming waste, and by conserving natural resources; and
- Maintaining active Emergency Preparedness and Business Continuity Programs to plan for and manage the District's functions during and following an emergency.

## DEPARTMENT BUDGET SUMMARY (OSD)

The department's projected spending is compared to prior years in the table below.

Category (\$ Thousands)	FY18	FY19	FY20		FY21	
	Actuals	Budget	Budget	% Chg	Budget	% Chg
Total Labor and Benefits	10,912	11,808	11,853	0.4%	11,813	-0.3%
Less: Capital Labor and Benefits	(768)	(686)	(626)	-8.8%	(637)	1.9%
Operating Labor and Benefits	10,144	11,122	11,227	0.9%	11,175	-0.5%
Contract Services	4,070	4,012	4,183	4.2%	4,250	1.6%
Other Costs	6,158	5,280	5,814	10.1%	6,093	4.8%
<b>Operating Total</b>	<b>20,373</b>	<b>20,415</b>	<b>21,224</b>	<b>4.0%</b>	<b>21,518</b>	<b>1.4%</b>

## BUDGET HIGHLIGHTS

The department's operating budget in FY20 is increasing \$0.8 million or 4.0 percent compared to FY19. In FY21, the budget will increase \$0.3 million or 1.4 percent compared to the prior fiscal year. Significant budget changes include:

### FY20

Total labor and benefit costs are increasing \$0.05 million. Capital labor and benefit costs are decreasing \$0.06 million due to funding one less position and a slower than projected rise in benefits cost. Operating labor and benefit costs are increasing \$0.1 million, primarily attributable to funding additional positions. Contract services are increasing \$0.2 million primarily due to an increase in security contracts serving the entire District. All other costs are increasing \$0.5 million primarily due to increases in hazardous waste disposal and District laboratory services costs.

### FY21

Total labor and benefit costs will decrease \$0.04 million primarily due to unfunding one operating position. Contract services will increase \$0.07 million primarily due to increases in security service level. Other costs will increase \$0.3 million primarily due to an increase in District laboratory services costs.

## STAFFING SUMMARY

The table below summarizes the transfers that have occurred among departments. There are no other staffing changes.

Position Type	FY18	FY19	FY20	FTE Chg	FY21	FTE Chg
Full-Time	52.0	53.0	52.0	(1.0)	52.0	0.0
Limited-Term / Temp Construction	3.0	3.0	2.0	(1.0)	1.0	(1.0)
Intermittent	0.0	0.0	0.0	0.0	0.0	0.0
Temporary / Part-Time	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total FTE</b>	<b>55.0</b>	<b>56.0</b>	<b>54.0</b>	<b>(2.0)</b>	<b>53.0</b>	<b>(1.0)</b>

## **MAINTENANCE AND CONSTRUCTION DEPARTMENT (MCD)**

### **OVERVIEW**

The Maintenance and Construction Department is responsible for maintaining the local water system infrastructure and facilities, performing preventative and corrective maintenance, replacing and rehabilitating the District's infrastructure, reading and maintaining the nearly 400,000 water meters, and maintaining all vehicles and heavy equipment.

### **DESCRIPTION OF SERVICES PROVIDED**

The department includes the Distribution Maintenance and Construction, Facilities Maintenance and Construction, Pipeline Construction and Equipment, and Maintenance Support divisions. Distribution Maintenance and Construction installs new services and pipelines and supports the maintenance, replacement, and installation of the water distribution system by identifying and repairing leaks, maintaining valves and hydrants, and replacing pipeline appurtenances. Facilities Maintenance and Construction provides support for the water treatment and distribution infrastructure and other facilities located throughout the Water System including the computer systems used to operate the water system. Pipeline Construction and Equipment installs replacement pipelines and provides paving services. Maintenance Support provides District-wide construction support and is responsible for vehicle and equipment maintenance and replacement, maintenance, repair, and reading of meters, and backflow prevention.

### **FY20 & FY21 GOALS**

The department has a key role in the Long-Term Infrastructure Investment Strategic Plan goal. Key department goals include:

- Increasing the miles of distribution pipe replaced from 15 to 17.5 miles in FY20 and to 20 miles in FY21;
- Reading, testing, and replacing revenue-generating water meters;
- Implementing OP/NET system improvements and cyber security controls for the industrial control systems and centralized security systems;
- Leading the industry in water loss control through using new and innovative technology, effective maintenance practices, and efficient operations; and
- Implementing preventive, predictive, and corrective maintenance plans that improve safety, reliability, and efficiency.

## DEPARTMENT BUDGET SUMMARY (MCD)

The department's projected spending is compared to prior years in the table below.

Category (\$ Thousands)	FY18	FY19	FY20		FY21	
	Actuals	Budget	Budget	% Chg	Budget	% Chg
Total Labor and Benefits	109,166	121,198	121,386	0.2%	123,995	2.1%
Less: Capital Labor and Benefits	<u>(37,941)</u>	<u>(41,885)</u>	<u>(46,088)</u>	10.0%	<u>(47,925)</u>	4.0%
Operating Labor and Benefits	71,226	79,313	75,298	-5.1%	76,070	1.0%
Contract Services	3,595	3,157	3,757	19.0%	3,641	-3.1%
Other Costs	<u>24,686</u>	<u>25,365</u>	<u>25,183</u>	-0.7%	<u>26,079</u>	3.6%
<b>Operating Total</b>	<b>99,506</b>	<b>107,835</b>	<b>104,239</b>	<b>-3.3%</b>	<b>105,790</b>	<b>1.5%</b>

## BUDGET HIGHLIGHTS

The department's operating budget in FY20 is decreasing \$3.6 million or 3.3 percent compared to FY19. In FY21, the budget will increase \$1.6 million or 1.5 percent compared to the prior fiscal year. Significant budget changes include:

### FY20

Total labor and benefit costs are increasing \$0.2 million primarily due to funding additional positions supporting the ramp-up of the Pipeline Rebuild Program and reducing reliance on fully-manned and operated (FM&O) services. As a result, the capital labor and benefit costs are increasing \$4.2 million. Operating labor and benefit costs are decreasing \$4.0 million primarily due to a shift to more capital-intensive work, savings taken to account for the time required to fill positions, and a slower than projected rise in benefits cost. Contract services are increasing \$0.6 million primarily attributable to vegetation control for fire abatement and other outside services. Other costs are decreasing \$0.2 million primarily for parts and materials used in facilities and grounds (\$0.6 million), vehicle use charges based on the restructure of rates (\$0.4 million) and a reduction of vehicles and equipment repair services (\$0.4 million). The savings are partially offset by anticipated petroleum price increases, additional vehicles and equipment (\$0.5 million), and a rise in city inspection fees (\$0.3 million).

### FY21

Total labor and benefit costs will increase \$2.6 million compared to the prior year due to funding additional positions that are primarily for the Pipeline Rebuild Program and to reduce reliance on FM&O outside concrete contract services. Consequently, contract services for concrete work will decrease \$0.1 million as work will be performed by the new crew. Other costs will increase \$0.9 million primarily to address operating cost for the additional vehicles and equipment for new crews.

## STAFFING SUMMARY

The table below summarizes the staffing changes and transfers that have occurred among departments.

Position Type	FY18	FY19	FY20	FTE Chg	FY21	FTE Chg
Full-Time	714.0	719.0	746.0	27.0	746.0	0.0
Limited-Term / Temp Construction	22.0	21.0	21.0	0.0	21.0	0.0
Intermittent	0.0	0.0	0.0	0.0	0.0	0.0
Temporary / Part-Time	3.0	2.5	2.5	0.0	2.5	0.0
<b>Total FTE</b>	<b>739.0</b>	<b>742.5</b>	<b>769.5</b>	<b>27.0</b>	<b>769.5</b>	<b>0.0</b>

## STAFFING CHANGES

The table below summarizes the FTE changes excluding transfers among departments. The net change in cost represents the difference between the annual salary at the top step including benefits for the existing highest job classification versus the highest classification for the change.

FY	Action	From Classification(s)	To Classification(s)	Cost Chg	FTE Chg	Project/Program
2020	Add		Assistant Constr & Maintenance Supt	234,530	1.0	Pipeline Rebuild
2020	Add		General Pipe Supervisor	212,411	1.0	
2020	Add		General Pipe Supervisor	212,411	1.0	
2020	Add		Heavy Equipment Operator	157,912	1.0	
2020	Add		Heavy Equipment Operator	157,912	1.0	
2020	Add		Heavy Equipment Operator	157,912	1.0	
2020	Add		Heavy Equipment Operator	157,912	1.0	
2020	Add		Heavy Equipment Operator	157,912	1.0	
2020	Add		Heavy Equipment Operator	157,912	1.0	
2020	Add		Heavy Transport Operator	150,375	1.0	
2020	Add		Heavy Transport Operator	150,375	1.0	
2020	Add		Heavy Transport Operator	150,375	1.0	
2020	Add		Heavy Transport Operator	150,375	1.0	

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FY	Action	From Classification(s)	To Classification(s)	Cost Chg	FTE Chg	Project/Program
2020	Add		Materials Specialist	146,704	1.0	Pipeline Rebuild
2020	Add		Utility Laborer / Water Distribution Plumber I	126,420	1.0	
2020	Add		Utility Laborer / Water Distribution Plumber I	126,420	1.0	
2020	Add		Water Distribution Plumber III / II / I	154,143	1.0	
2020	Add		Water Distribution Plumber III / II / I	154,143	1.0	
2020	Add		Water Distribution Plumber III / II / I	154,143	1.0	
2020	Add		Water Distribution Plumber III / II / I	154,143	1.0	
2020	Add		Water Distribution Plumber III / II / I	154,143	1.0	
2020	Add		Water Distribution Plumber III / II / I	154,143	1.0	
2020	Add		Water Distribution Plumber III / II / I	154,143	1.0	
2020	Add		Water Distribution Plumber III / II / I	154,143	1.0	
2020	Add		Water Distribution Plumber III / II / I	154,143	1.0	
2020	Flex Class & Character	Janitor	(LT) Paving Raker A / Janitor	36,780	0.0	Reduce reliance on FM&O and conduct saw-cutting pilot study
2020	Flex Class & Character	Janitor	(LT) Paving Raker A / Janitor	36,780	0.0	
2020	Flex Class & Character	Gardener II / I	(LT) Concrete Finisher II / I / Gardener I / II	20,738	0.0	Reduce reliance on FM&O and support additional Pipeline Rebuild
2020	Flex Class & Character	Gardener II / I	(LT) Concrete Finisher I / II / Gardener I / II	20,738	0.0	
<b>FY20 TOTAL</b>				<b>4,110,191</b>	<b>25.0</b>	
2021	Flex Class & Character	Gardener II / I	(LT) Concrete Finisher II / I / Gardener I / II	20,698	0.0	Reduce reliance on FM&O and support additional Pipeline Rebuild
2021	Flex Class & Character	Gardener II / I	(LT) Concrete Finisher II / I / Gardener I / II	20,698	0.0	
<b>FY21 TOTAL</b>				<b>41,395</b>	<b>0.0</b>	

In FY20, the department is adding 25 full-time FTEs to create two additional crews in support of the Pipeline Rebuild Program. One new crew will be operational in each fiscal year. All positions will be authorized in FY20 to enable a shortened recruitment lead time for FY21 to support a 2.5 mile increase in the miles of pipe being replaced. The second crew is funded starting in FY21. In addition, four full-time FTEs are flexing to limited-term positions to decrease reliance on outside concrete services and to conduct a pilot study on sawcutting.

In FY21, the department is flexing two full-time FTEs to further reduce reliance on outside concrete services.

## **WATER OPERATIONS DEPARTMENT (WOD)**

### **OVERVIEW**

The Water Operations Department is responsible for the operation of water supply, water treatment, and water distribution facilities spanning six counties, including the Freeport Regional Water Facilities. The Department also operates and maintains Pardee and Camanche Dams including hydropower generation facilities.

### **DESCRIPTION OF SERVICES PROVIDED**

The department includes the Water Treatment and Distribution and the Water Supply divisions. The Water Treatment and Distribution Division is responsible for providing high quality water to the District's 1.4 million customers and meeting or exceeding public health and aesthetic water quality standards. The Water Supply Division is responsible for raw water operation including flood control and Mokelumne River regulation, maintaining the District's aqueduct rights of way, operation and maintenance of upcountry water and wastewater systems and facilities, water system regulatory compliance and monitoring, water customer complaint investigation and support, and emergency response preparedness. The department is also responsible for implementing a comprehensive Energy Management Strategy.

### **FY20 & FY21 GOALS**

The department has a key role in implementing the Water Quality and Environmental Protection Strategic Plan goal. Key department goals include:

- Operating the water system to meet multiple objectives including municipal water supply, water quality, power generation, river flow regulation, environmental protection, and flood control;
- Meeting Joint Settlement Agreement (JSA) Mokelumne River minimum flow releases 100% of the time;
- Meeting water quality regulations and water quality goals 100% of the time;
- Managing Freeport Regional Water Facilities and other supplemental supply projects and supporting development of new supply projects;
- Operating the water system efficiently to minimize costs; and
- Leading the District's Energy Management Strategy.

## DEPARTMENT BUDGET SUMMARY (WOD)

The department's projected spending is compared to prior years in the table below.

Category (\$ Thousands)	FY18	FY19	FY20		FY21	
	Actuals	Budget	Budget	% Chg	Budget	% Chg
Total Labor and Benefits	32,721	35,698	34,251	-4.1%	34,456	0.6%
Less: Capital Labor and Benefits	(1,763)	(1,325)	(2,251)	69.9%	(2,269)	0.8%
Operating Labor and Benefits	30,958	34,374	32,000	-6.9%	32,186	0.6%
Contract Services	1,280	2,767	1,121	-59.5%	1,180	5.3%
Other Costs	20,181	20,892	22,546	7.9%	23,218	3.0%
<b>Operating Total</b>	<b>52,418</b>	<b>58,032</b>	<b>55,667</b>	<b>-4.1%</b>	<b>56,585</b>	<b>1.6%</b>

## BUDGET HIGHLIGHTS

The department's operating budget in FY20 is decreasing \$2.4 million or 4.1 percent compared to FY19. In FY21, the budget will increase \$0.9 million or 1.6 percent compared to the prior fiscal year. Significant budget changes include:

### FY20

Operating labor and benefit costs are decreasing \$2.4 million primarily due to a shift to support an increase in capital-intensive work, savings taken consistent with prior trends, and a slower than projected rise in benefits cost. Contract services are decreasing \$1.6 million primarily due to completion of the school Lead Sampling Program. Other costs are increasing \$1.7 million primarily attributable to energy tariff rate adjustments for water treatment and distribution (\$1.3 million) in addition to water production volume changes, and spoils/sludge disposal (\$0.2 million).

### FY21

Operating labor and benefit costs will increase \$0.2 million due to scheduled salary step increases offset by salary savings and the deletion of a limited-term position that supported the school Lead Sampling Program. Contract services will increase \$0.06 million primarily due to additional maintenance support for chlorination boosting stations. Other costs will increase \$0.7 million mainly driven by energy (\$0.4 million) and chemicals (\$0.1 million).

## STAFFING SUMMARY

The table below summarizes the transfer staffing changes and transfers that have occurred among departments.

Position Type	FY18	FY19	FY20	FTE Chg	FY21	FTE Chg
Full-Time	183.0	183.0	185.0	2.0	185.0	0.0
Limited-Term / Temp Construction	1.0	1.0	1.0	0.0	0.0	(1.0)
Intermittent	0.0	0.0	0.75	0.75	0.75	0.0
Temporary / Part-Time	2.0	2.5	2.0	(0.5)	2.0	0.0
<b>Total FTE</b>	<b>186.0</b>	<b>186.5</b>	<b>188.75</b>	<b>2.25</b>	<b>187.75</b>	<b>(1.0)</b>

## STAFFING CHANGES

The table below summarizes the FTE changes excluding transfers among departments. The net change in cost represents the difference between the annual salary at the top step including benefits for the existing highest job classification versus the highest classification for the change.

FY	Action	From Classification(s)	To Classification(s)	Cost Chg	FTE Chg	Project/Program
2020	Add		Water System Inspector II / I	165,982	1.0	Pipeline Rebuild
2020	Add		Water System Inspector II / I	165,982	1.0	
2020	Convert	(PT) Housekeeper	(INT) Housekeeper	26,603	0.25	Operational needs
<b>FY20 TOTAL</b>				<b>358,568</b>	<b>2.25</b>	
2021	Delete	(LT) Water System Inspector II / I		(165,659)	(1.0)	Completion of school Lead Sampling
<b>FY21 TOTAL</b>				<b>(165,659)</b>	<b>(1.0)</b>	

In FY20, the department is adding two full-time FTE Water System Inspectors to support the Pipeline Rebuild Program, and converting a part-time Housekeeper at the Pardee facility to intermittent for operational needs.

In FY21, the department is deleting the limited-term Water System Inspector that manages the school Lead Sampling Program as this program will be completed in FY20.

## **WATER RESOURCES DEPARTMENT (WRD)**

### **OVERVIEW**

The Water Resources Department develops and administers the plans, policies and programs necessary to protect existing District water resources, develops additional water supplies to meet future needs, and assures the availability of adequate physical facilities to meet those needs.

### **DESCRIPTION OF SERVICES PROVIDED**

The department includes the Bay-Delta Section, Water Resources Planning and Water Supply Improvements divisions. The Bay-Delta Section provides the District's technical and policy evaluation and advocacy efforts related to the state and federal plans to restore the San Francisco Bay-Delta ecosystem, technical and project management support to all sections of the department, legislative and policy review and development, and special projects assigned by the Department Director. Water Resources Planning Division administers the District's licenses, permits and agreements for current water supplies and hydropower facilities; conducts water resource modeling and analyses to support operations and planning; performs hydrologic and hydraulic analysis of the District's facilities; and prepares reports and implements plans needed to comply with state and federal regulations related to water resources management. Water Supply Improvements Division plans and implements supplemental supply and recycling projects needed to meet current and future needs.

### **FY20 & FY21 GOALS**

The department has primary responsibility for the Long-Term Water Supply Strategic Plan goal. Key department goals include:

- Continuing collaborative partnerships for ensuring dry-year water supply with emphasis on a long-term water transfer agreement with Placer County Water Agency, potential participation in an expanded Los Vaqueros Reservoir project, development of a Groundwater Banking Demonstration project with San Joaquin County, and water supply reliability partnerships in the Bay Area;
- Initiating development of a Groundwater Sustainability Plan for the East Bay Plain;
- Continuing to evaluate use of recycled water to further reduce demand on Mokelumne River and East Bay water supplies;
- Participating in State Water Resources Control Board (SWRCB) hearings on the California Water Fix and the Water Quality Control Plan; and
- Continuing collaborative partnerships with upcountry agencies, resources agencies, and SWRCB to coordinate long-term water supply planning.



## DEPARTMENT BUDGET SUMMARY (WRD)

The department's projected spending is compared to prior years in the table below.

Category (\$ Thousands)	FY18	FY19	FY20		FY21	
	Actuals	Budget	Budget	% Chg	Budget	% Chg
Total Labor and Benefits	8,417	8,814	8,607	-2.4%	8,639	0.4%
Less: Capital Labor and Benefits	(2,116)	(1,664)	(1,866)	12.1%	(1,880)	0.8%
Operating Labor and Benefits	6,301	7,150	6,741	-5.7%	6,759	0.3%
Contract Services	494	200	410	105.0%	335	-18.3%
Other Costs	1,449	1,684	1,781	5.8%	1,805	1.4%
<b>Operating Total</b>	<b>8,244</b>	<b>9,034</b>	<b>8,932</b>	<b>-1.1%</b>	<b>8,899</b>	<b>-0.4%</b>

## BUDGET HIGHLIGHTS

The department's operating budget in FY20 is decreasing \$0.1 million or 1.1 percent compared to FY19. In FY21, the budget will decrease \$0.03 million or 0.4 percent compared to the prior fiscal year. Significant budget changes include:

### FY20

Total labor and benefit costs are decreasing \$0.2 million primarily due to a slower than projected rise in benefits cost. Capital labor and benefit costs are increasing \$0.2 million due to a higher portion of labor allocated to capital projects related to compliance with state and federal regulations. Contract services costs are increasing \$0.2 million to develop a Historical Properties Management Plan (HPMP), and to update the Bay-Delta Water Quality Control Plan. Other costs are increasing \$0.1 million due to necessary project models for dam safety training, and the District's share of payments to the joint Dublin San Ramon Services District/EBMUD Recycled Water Authority (DERWA) for recycled water use.

### FY21

Total labor and benefit costs will increase \$0.03 million due to scheduled salary step increases. Contract services costs will decrease \$0.08 million due to work completed on the HPMP. Other costs will increase \$0.02 million primarily due to the District's share of payments to DERWA for recycled water use.

## STAFFING SUMMARY

The table below summarizes the staffing changes and transfers that have occurred among departments.

Position Type	FY18	FY19	FY20	FTE Chg	FY21	FTE Chg
Full-Time	36.0	36.0	37.0	1.0	37.0	0.0
Limited-Term / Temp Construction	0.0	0.0	1.0	1.0	1.0	0.0
Intermittent	0.0	0.0	0.0	0.0	0.0	0.0
Temporary / Part-Time	0.5	0.5	0.0	(0.5)	0.0	0.0
<b>Total FTE</b>	<b>36.5</b>	<b>36.5</b>	<b>38.0</b>	<b>1.5</b>	<b>38.0</b>	<b>0.0</b>

## STAFFING CHANGES

The table below summarizes the FTE changes excluding transfers among departments. The net change in cost represents the difference between the annual salary at the top step including benefits for the existing highest job classification versus the highest classification for the change.

FY	Action	From Classification(s)	To Classification(s)	Cost Chg	FTE Chg	Project/Program
2020	Flex Class & Character	(PT) Engineering Aide	(LT) Junior Engineer / (PT) Engineering Aide	127,289	0.5	Bridge classification to create pipeline of qualified candidates
<b>FY20 Total</b>				<b>127,289</b>	<b>0.5</b>	

In FY20, the department is converting one part-time FTE to a limited-term FTE to bridge the Engineering Aide and Junior Engineer classifications in order to create a pipeline of qualified candidates.

## **NATURAL RESOURCES DEPARTMENT (NRD)**

### **OVERVIEW**

The Natural Resources Department develops and implements plans, policies and programs necessary to manage over 50,000 acres of water, watershed lands and related facilities. The department develops and implements programs for water quality, environmental protection and public recreation on these lands, and the reservoirs, rivers and streams within them.

### **DESCRIPTION OF SERVICES PROVIDED**

The department includes the East Bay Watershed and Recreation, Mokelumne Watershed and Recreation, Fisheries and Wildlife, and Natural Resources Administration divisions. Both the East Bay and Mokelumne Watershed and Recreation divisions, manage and protect the local and upcountry watershed lands owned by EBMUD, including overseeing environmental, recreation, and public education programs. The Fisheries and Wildlife Division develops and maintains the scientific information necessary to manage and protect wildlife and fisheries on EBMUD-owned lands and the Lower Mokelumne River fishery, conducts monitoring to comply with water right agreements, provides biological support for capital projects, and responds to service area water discharge incidents. The Natural Resources Administration Division supports all divisions with planning, grant administration, budgeting, regional collaborations and initiatives, and special projects as assigned by the Department Director.

### **FY20 & FY21 GOALS**

The department has a key role in the Water Quality and Environmental Protection Strategic Plan goal. Key department goals include:

- Implementing the water quality protection, environmental stewardship and recreation and public use programs consistent with the East Bay and Mokelumne Watershed Master Plans;
- Continuing to build on the successful fishery program for the Mokelumne River including expansion of the science programs on outmigration survival, juvenile barging, hatchery genetics management and working collaboratively with public organization, non-profit, and local landowner partners along the lower Mokelumne River;
- Developing the San Leandro Creek Management Plan;
- Participating and collaborating in addressing forest health issues in the Mokelumne watershed; and
- Partnering with the Operations and Maintenance Department in ongoing water quality monitoring in the Mokelumne watershed.

## DEPARTMENT BUDGET SUMMARY (NRD)

The department's projected spending is compared to prior years in the table below.

Category (\$ Thousands)	FY18 Actuals	FY19 Budget	FY20 Budget	% Chg	FY21 Budget	% Chg
Total Labor and Benefits	10,090	10,229	10,352	1.2%	10,570	2.1%
Less: Capital Labor and Benefits	(134)	(15)	(66)	348.0%	(67)	0.7%
Operating Labor and Benefits	9,957	10,215	10,286	0.7%	10,504	2.1%
Contract Services	2,474	3,020	3,064	1.4%	3,132	2.2%
Other Costs	3,415	3,570	3,619	1.4%	3,706	2.4%
<b>Operating Total</b>	<b>15,845</b>	<b>16,805</b>	<b>16,970</b>	<b>1.0%</b>	<b>17,341</b>	<b>2.2%</b>

## BUDGET HIGHLIGHTS

The department's operating budget in FY20 is increasing \$0.2 million or 1.0 percent compared to FY19. In FY21, the budget will increase \$0.4 million or 2.2 percent compared to the prior fiscal year. Significant budget changes include:

### FY20

Total labor and benefit costs are increasing \$0.1 million, while operating labor and benefits are increasing by a smaller amount primarily due to scheduled salary step increases, and a higher portion of labor allocated to capital for environmental surveying and monitoring. Contract services costs are increasing \$0.04 million primarily due to public safety services provided by the East Bay Regional Park District Police and Amador and Calaveras County Sheriff's Department. Other costs are increasing \$0.05 million primarily due to increased costs for the California Department of Fish and Game to operate the Mokelumne River Fish Hatchery.

### FY21

Total labor and benefit costs will increase \$0.2 million due to scheduled salary step increases. Contract services costs will increase \$0.07 million due to anticipated increases for watershed security contracts. Other costs will increase \$0.09 million due to the hatchery operations agreement with the California Department of Fish and Game.

## STAFFING SUMMARY

The table below summarizes the staffing changes and transfers that have occurred among departments.

Position Type	FY18	FY19	FY20	FTE Chg	FY21	FTE Chg
Full-Time	66.0	66.0	64.0	(2.0)	64.0	0.0
Limited-Term / Temp Construction	0.0	0.0	0.0	0.0	0.0	0.0
Intermittent	0.0	0.0	0.0	0.0	0.0	0.0
Temporary / Part-Time	2.5	2.5	2.5	0.0	2.5	0.0
<b>Total FTE</b>	<b>68.5</b>	<b>68.5</b>	<b>66.5</b>	<b>(2.0)</b>	<b>66.5</b>	<b>0.0</b>

## **ENGINEERING AND CONSTRUCTION DEPARTMENT (ENG)**

### **OVERVIEW**

The Engineering and Construction Department is responsible for developing plans, policies and programs that assure the availability of adequate physical facilities to meet future water service needs. These responsibilities include water system capital program implementation, infrastructure management, system expansions, and facility improvements. The department provides technical leadership and innovation in engineering, construction, research and development, and operational efficiency improvements.

### **DESCRIPTION OF SERVICES PROVIDED**

The department includes Water Distribution Planning, Design, Construction, Pipeline Infrastructure, and Engineering Services divisions. Services include planning, design, and construction management and inspection of water system capital projects. Support services include cost estimating, contract specifications preparation, bid and award management, surveying, mapping, graphic design, hydraulic modeling, geotechnical engineering, materials testing, engineering records storage and engineering support to other departments.

### **FY20 & FY21 GOALS**

The department is primarily responsible for leading the Long-Term Infrastructure Investment goal and providing a supporting role to all other goals identified in the Strategic Plan. Key department goals include:

- Developing and maintaining coordinated master plans;
- Implementing the CIP based on priorities identified in the plans;
- Continuing support for the ramp-up of planned distribution pipeline infrastructure renewals;
- Planning, designing and overseeing the construction of improvements at the District's WTPs identified in a recent comprehensive assessment to ensure high quality water continues to be delivered to customers; and
- Supporting the implementation and use of information technologies that improve the efficiency and effectiveness of business processes, such as geospatial tools and radio frequency identification.

## DEPARTMENT BUDGET SUMMARY (ENG)

The department's projected spending is compared to prior years in the table below.

Category (\$ Thousands)	FY18	FY19	FY20		FY21	
	Actuals	Budget	Budget	% Chg	Budget	% Chg
Total Labor and Benefits	51,015	57,614	56,990	-1.1%	57,607	1.1%
Less: Capital Labor and Benefits	(34,664)	(38,777)	(37,932)	-2.2%	(38,153)	0.6%
Operating Labor and Benefits	16,351	18,837	19,058	1.2%	19,454	2.1%
Contract Services	135	160	169	5.8%	167	-1.0%
Other Costs	1,051	1,153	1,398	21.2%	1,403	0.4%
<b>Operating Total</b>	<b>17,537</b>	<b>20,150</b>	<b>20,625</b>	<b>2.4%</b>	<b>21,024</b>	<b>1.9%</b>

## BUDGET HIGHLIGHTS

The department's operating budget in FY20 is increasing \$0.5 million or 2.4 percent compared to FY19. In FY21, the budget will increase \$0.4 million or 1.9 percent compared to the prior fiscal year. Significant budget changes include:

### FY20

Total labor and benefit costs are decreasing \$0.6 million despite funding additional positions to support the ramp-up of the Pipeline Rebuild Program which are offset by savings taken to account for time required to fill positions and a slower than projected rise in benefits cost. Capital labor and benefit costs are decreasing \$0.8 million primarily due to a shift from capital labor to operating. Contract services are increasing \$0.01 million primarily due to regulatory requirements for Moraga Creek. Other costs are increasing \$0.2 million primarily due to software licenses and the state Division of Safety of Dams (DSOD) fees.

### FY21

Total labor and benefit costs will increase \$0.6 million primarily due to scheduled salary step increases. Other costs will increase \$0.01 million primarily due to higher fees for DSOD.

## STAFFING SUMMARY

The below table summarizes the staffing changes and transfers that have occurred among departments.

Position Type	FY18	FY19	FY20	FTE Chg	FY21	FTE Chg
Full-Time	257.0	257.0	272.0	15.0	272.0	0.0
Limited-Term / Temp Construction	15.0	14.0	9.0	(5.0)	9.0	0.0
Intermittent	0.0	0.0	0.0	0.0	0.0	0.0
Temporary / Part-Time	4.5	4.5	4.5	0.0	4.5	0.0
<b>Total FTE</b>	<b>276.5</b>	<b>275.5</b>	<b>285.5</b>	<b>10.0</b>	<b>285.5</b>	<b>0.0</b>



## STAFFING CHANGES

The table below summarizes the FTE changes excluding transfers among departments. The net change in cost represents the difference between the annual salary at the top step including benefits for the existing highest job classification versus the highest classification for the change.

FY	Action	From Classification(s)	To Classification(s)	Cost Chg	FTE Chg	Project/Program
2020	Add		Associate Civil Engineer	234,530	1.0	Pipeline Rebuild
2020	Add		Associate Civil Engineer	234,530	1.0	
2020	Add		Engineering Designer II / I	187,746	1.0	
2020	Add		Engineering Designer II / I	187,746	1.0	
2020	Add		Engineering Designer II / I	187,746	1.0	
2020	Add		Materials Testing Technician II / I	150,375	1.0	
2020	Add		Construction Inspector	187,746	1.0	
2020	Add		Construction Inspector	187,746	1.0	
2020	Add		Chief of Party	192,521	1.0	
2020	Add		Survey Technician II / I	165,982	1.0	
2020	Delete	(TC) Senior Construction Inspector / (TC) Construction Inspector		(207,202)	(1.0)	Wildcat Pipeline; Alameda Crossings
2020	Delete	(TC) Assistant Engineer / (TC) Junior Engineer / (TC) Senior Construction Inspector		(212,411)	(1.0)	Faria Project; Orinda WTP Reliability and Maintenance
2020	Add		(TC) Senior Construction Inspector / (TC) Construction Inspector	207,202	1.0	Alameda Crossings; Reservoir Rehabilitation
2020	Add		(TC) Assistant Engineer / (TC) Junior Engineer / (TC) Senior Construction Inspector	212,411	1.0	

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FY	Action	From Classification(s)	To Classification(s)	Cost Chg	FTE Chg	Project/Program
2020	Delete	(TC) Associate Civil Engineer / (TC) Associate Electrical Engineer / (TC) Associate Mechanical Engineer		(234,530)	(1.0)	Faria Project; Orinda WTP Reliability and Maintenance
2020	Delete	(TC) Supervising Construction Inspector		(228,729)	(1.0)	
2020	Delete	(TC) Assistant Engineer / (TC) Junior Engineer / (TC) Senior Construction Inspector		(212,411)	(1.0)	
2020	Add		(TC) Associate Civil Engineer / (TC) Associate Electrical Engineer / (TC) Associate Mechanical Engineer	234,530	1.0	Orinda WTP Disinfection Improvement; Pumping Plant Rehabilitation
2020	Add		(TC) Supervising Construction Inspector	228,729	1.0	
2020	Add		(TC) Assistant Engineer / (TC) Junior Engineer / (TC) Senior Construction Inspector	212,411	1.0	
2020	Delete	(LT) Senior Construction Inspector / (LT) Construction Inspector		(207,202)	(1.0)	Pumping Plant Rehabilitation; Reservoir Rehabilitation
2020	Add		(LT) Senior Construction Inspector / (LT) Construction Inspector	207,202	1.0	Orinda WTP Disinfection Improvement; Pumping Plant Rehabilitation; Reservoir Rehabilitation
2020	Delete	(LT) Construction Inspector / (LT) Senior Construction Inspector		(187,746)	(1.0)	Applicant Pipeline Extensions and / or Relocations
2020	Delete	(TC) Construction Inspector		(187,746)	(1.0)	Faria Pipelines; Pipeline Rebuild
2020	Add		(LT) Construction Inspector / (LT) Senior Construction Inspector	187,746	1.0	Pipeline Rebuild; Applicant Pipeline Extensions and / or Relocations
2020	Add		(TC) Construction Inspector	187,746	1.0	

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FY	Action	From Classification(s)	To Classification(s)	Cost Chg	FTE Chg	Project/Program
2020	Convert	(TC) Assistant Engineer	Assistant Engineer	0	0.0	Convert to baseline work due to success of Commissioning Group Pilot
2020	Convert	(TC) Assistant Engineer / (TC) Junior Engineer / (TC) Senior Construction Inspector	Assistant Engineer / Junior Engineer / Senior Construction Inspector	0	0.0	
2020	Convert	(TC) Associate Electrical Engineer / (TC) Assistant Engineer / (TC) Junior Engineer	Associate Electrical / Civil / Mechanical / Control System Engineer / Assistant Engineer / Junior Engineer	0	0.0	
2020	Convert	(LT) Materials Inspector / (LT) Senior Construction Inspector / (LT) Construction Inspector	Materials Inspector / Senior Construction Inspector / Construction Inspector	0	0.0	Pipeline Rebuild; Applicant Pipeline Extensions and / or Relocations; Pumping Plant Rehabilitation; Reservoir Rehabilitation
2020	Convert	(LT) Materials Inspector / (LT) Senior Construction Inspector / (LT) Construction Inspector	Materials Inspector / Senior Construction Inspector / Construction Inspector	0	0.0	
<b>FY20 TOTAL</b>				<b>1,916,668</b>	<b>10.0</b>	

In FY20, the department is adding ten FTEs in support of the Pipeline Rebuild Program.

Three temporary construction FTEs and two limited-term FTEs are converted to full-time FTEs due to the successful pilot of the Commissioning Group and an increase in material inspection baseline work.

Six temporary construction FTEs and two limited-term FTEs will be deleted due to completion of work, and six temporary construction FTEs and two limited-term FTEs are being added to support various capital projects which net to a zero change in FTEs.

## **OFFICE OF THE GENERAL MANAGER (GEN)**

### **OVERVIEW**

The Office of the General Manager manages the overall operations of the District and implements the policies and priorities of the elected Board of Directors with an emphasis on effectively communicating with all stakeholders and advancing EBMUD's policy objectives with the state legislature and congress.

### **DESCRIPTION OF SERVICES PROVIDED**

The department includes the Office of the General Manager, Inter-Governmental Affairs, Public Affairs and the Office of the Secretary. The Office of the General Manager provides several District-wide functions including: legislative and intergovernmental agency advocacy; public and community education and outreach; support to the Board of Directors and District-wide records management, including managing responses to public records requests.

### **FY20 & FY21 GOALS**

The department supports all six Strategic Plan goals. Key department goals include:

- Providing cross-departmental direction to cohesively and effectively manage District operations and implement Board policies and priorities;
- Supporting EBMUD's water and wastewater program goals through engaging and communicating with the public and employees about District operations and infrastructure, Board policy proposals and decisions, and stewardship of the District's natural, financial and human resources;
- Educating stakeholders on the need for a generational investment in infrastructure and on other District priorities as expressed through the District's Strategic Plan goals and objectives; and
- Supporting EBMUD's water and wastewater program goals through legislative efforts to advance EBMUD's policy objectives, acquire state and federal funding and proactively influence legislation through active outreach and customer education.

## DEPARTMENT BUDGET SUMMARY (GEN)

The department's projected spending is compared to prior years in the table below.

Category (\$ Thousands)	FY18	FY19	FY20		FY21	
	Actuals	Budget	Budget	% Chg	Budget	% Chg
Total Labor and Benefits	4,938	5,577	5,616	0.7%	5,630	0.3%
Less: Capital Labor and Benefits	-	-	-	0.0%	-	0.0%
Operating Labor and Benefits	4,938	5,577	5,616	0.7%	5,630	0.3%
Contract Services	160	125	222	77.4%	146	-34.0%
Other Costs	494	1,077	588	-45.4%	1,094	86.2%
<b>Operating Total</b>	<b>5,592</b>	<b>6,779</b>	<b>6,426</b>	<b>-5.2%</b>	<b>6,871</b>	<b>6.9%</b>

## BUDGET HIGHLIGHTS

The department's operating budget in FY20 is decreasing \$0.4 million or 5.2 percent compared to FY19. In FY21, the budget will increase \$0.4 million or 6.9 percent compared to the prior fiscal year. Significant budget changes include:

### FY20

Total labor and benefit costs are increasing \$0.04 million primarily due to funding an additional position which is offset by a slower than projected rise in benefit costs. Contract services are increasing \$0.1 million due to the District-wide customer survey which occurs in the first year of the biennial budget. Other costs are decreasing \$0.5 million primarily due to Board election fees charged by the counties to participate in the ballot process which occurs in the second year of the biennial budget.

### FY21

Total labor and benefit costs will increase \$0.01 million due to scheduled salary step increases. Contract services will decrease \$0.08 million due to the District-wide customer survey expense which occurred in the prior fiscal year. Other costs will increase \$0.5 million due to the Board election fees mentioned above which occur in the second year of the budget.

## STAFFING SUMMARY

The table below summarizes the staffing changes and transfers that have occurred among departments.

Position Type	FY18	FY19	FY20	FTE Chg	FY21	FTE Chg
Full-Time	25.0	25.0	26.0	1.0	26.0	0.0
Limited-Term / Temp Construction	0.0	0.0	0.0	0.0	0.0	0.0
Intermittent	0.0	0.0	0.0	0.0	0.0	0.0
Temporary / Part-Time	0.5	0.5	0.5	0.0	0.5	0.0
<b>Total FTE</b>	<b>25.5</b>	<b>25.5</b>	<b>26.5</b>	<b>1.0</b>	<b>26.5</b>	<b>0.0</b>

## STAFFING CHANGES

The table below summarizes the FTE changes excluding transfers among departments. The net change in cost represents the difference between the annual salary at the top step including benefits for the existing highest job classification versus the highest classification for the change.

FY	Action	From Classification(s)	To Classification(s)	Cost Chg	FTE Chg	Project/Program
2020	Flex Class	Special Assistant III	Special Assistant I / II / III	0	0.0	Legislative Affairs
<b>FY20 TOTAL</b>				<b>0</b>	<b>0.0</b>	

In FY20, one full-time FTE was reassigned to the Inter-Governmental Affairs Office from the Wastewater Inflow & Infiltration Program.



## **FINANCE DEPARTMENT (FIN)**

### **OVERVIEW**

The Finance Department is responsible for providing proactive and strategic management of District finances and ensuring the long-term financial stability of the District. These responsibilities include managing the finances to meet funding needs, ensuring adequate internal financial controls, reporting financials timely and accurately, managing the budget efficiently, implementing reasonable rates and charges, optimizing investment of cash funds, maintaining good standing in the credit markets, and engaging actively with external stakeholders to promote fiscal transparency and accountability.

### **DESCRIPTION OF SERVICES PROVIDED**

The department includes Accounting, Budget Office, Internal Audit, Treasury Operations, Purchasing, and Risk Management divisions. It provides a range of financial services including accounts payable and payroll, financial reporting, biennial budget management, grant administration, strategic planning coordination, debt management, credit rating agency and investor relations, rates and charges, investment of funds, procurement and supply chain management, liability and workers compensation claim management, insurance procurement, and internal controls. The department also supports the District's Employee Retirement System with respect to investment management.

### **FY20 & FY21 GOALS**

The department supports all six Strategic Plan goals but is primarily responsible for leading the Long-Term Financial Stability Strategic Plan goal. Key department goals include:

- Developing a long-range financing plan;
- Developing the biennial budget for FY20 and FY21;
- Developing the FY20 and FY21 rates, fees, and charges;
- Increasing fiscal transparency and accountability in financial reporting; and
- Replacing aging financial, materials management, and payroll information computer systems.

## DEPARTMENT BUDGET SUMMARY (FIN)

The department's projected spending is compared to prior years in the table below.

Category (\$ Thousands)	FY18	FY19	FY20		FY21	
	Actuals	Budget	Budget	% Chg	Budget	% Chg
Total Labor and Benefits	15,412	18,175	18,244	0.4%	18,478	1.3%
Less: Capital Labor and Benefits	(506)	-	(1,778)	0.0%	(1,829)	2.9%
Operating Labor and Benefits	14,906	18,175	16,466	-9.4%	16,649	1.1%
Contract Services	1,021	1,466	1,388	-5.4%	1,439	3.7%
Other Costs	<u>6,931</u>	<u>9,908</u>	<u>8,681</u>	-12.4%	<u>9,111</u>	4.9%
<b>Operating Total</b>	<b>22,858</b>	<b>29,549</b>	<b>26,535</b>	-10.2%	<b>27,200</b>	2.5%

## BUDGET HIGHLIGHTS

The department's operating budget in FY20 is decreasing \$3.0 million or 10.2 percent compared to FY19. In FY21, the budget will increase \$0.7 million or 2.5 percent compared to the prior fiscal year. Significant budget changes include:

### FY20

Capital labor and benefit costs are increasing \$1.8 million primarily to fund additional positions for the financial/materials management information computer system (FIS/MMIS) replacement project. Operating labor and benefit costs are decreasing \$1.7 million primarily due to a shift from operating to capital and a slower than projected rise in benefits cost. Contract services are decreasing \$0.08 million primarily due to the new copiers which require less maintenance costs. Other costs are decreasing \$1.25 million for self-insured liability claims and workers' compensation claims based on multi-year prior trends, and the Wastewater System budgeting for their portion of insurance premiums.

### FY21

Total labor and benefit costs will increase \$0.2 million primarily due to scheduled salary step increases and overtime for implementation of the FIS/MMIS replacement project. Contract services will increase \$0.05 million primarily due to worker's compensation third-party administration, and office and print shop equipment maintenance costs. Other costs will increase \$0.4 million for self-insured liability claims and workers' compensation claims.

## STAFFING SUMMARY

The table below summarizes the staffing changes and transfers that have occurred among departments.

Position Type	FY18	FY19	FY20	FTE Chg	FY21	FTE Chg
Full-Time	98.0	98.0	101.0	3.0	101.0	0.0
Limited-Term / Temp Construction	1.0	1.0	1.0	0.0	1.0	0.0
Intermittent	0.0	0.0	0.0	0.0	0.0	0.0
Temporary / Part-Time	0.5	0.5	0.5	0.0	0.5	0.0
<b>Total FTE</b>	<b>99.5</b>	<b>99.5</b>	<b>102.5</b>	<b>3.0</b>	<b>102.5</b>	<b>0.0</b>

## STAFFING CHANGES

The table below summarizes the FTE changes excluding transfers among departments. The net change in cost represents the difference between the annual salary at the top step including benefits for the existing highest job classification versus the highest classification for the change.

FY	Action	From Classification(s)	To Classification(s)	Cost Chg	FTE Chg	Project/Program
2020	Flex Class & Character	Administrative Clerk / Senior Administrative Clerk	(LT) Info Syst Support Analyst II / Administrative Clerk	81,827	0.0	FIS / MMIS Replacement Project
2020	Flex Class & Character	Administrative Clerk	(LT) Info Syst Support Analyst II / Administrative Clerk	81,827	0.0	
2020	Flex Class & Character	Ranger Naturalist II / I	(LT) Info Syst Support Analyst II / Ranger Naturalist II / I	9,728	0.0	
<b>FY20 TOTAL</b>				<b>173,382</b>	<b>0.0</b>	

In FY20, three authorized FTEs are temporarily reallocated to support the FIS/MMIS computer replacement project currently underway. These FTEs are required to streamline business processes as part of the implementation of the new computer system.

## **INFORMATION SYSTEMS DEPARTMENT (ISD)**

### **OVERVIEW**

The Information Systems Department is responsible for planning, acquiring, developing, deploying, operating, and maintaining information technology and services in support of District functions. These responsibilities include providing security and recoverability for business systems and data critical to the operations of the District.

### **DESCRIPTION OF SERVICES PROVIDED**

The department includes the IT Applications, IT Operations, and IT Security divisions. Together, these divisions support the lifecycle of the District's technology and communication needs including initial planning, acquisition, development, deployment, and ongoing maintenance. The department also supports: desktop, mobile, and cloud computing; remote access; network connectivity; telephone, radio, and microwave communications; application development and integration for a wide range of business functions; risk identification in computing and network environments; guidance to ensure District systems and data are properly secured and available; and planning to ensure business continuity of District computing resources.

### **FY20 & FY21 GOALS**

The department has a key role in the Long-Term Financial Stability Strategic Plan goal. Key department goals include:

- Ensuring maintenance and project work is performed in a manner that supports the achievement of goals outlined in the IT Master Plan;
- Completing planning and beginning implementation of projects to replace the human resources and work management systems;
- Implementing a new financial information system, including procurement and warehousing;
- Implementing a new laboratory information management system; and
- Implementing the IT Governance FY20-21 Project Portfolio.

## DEPARTMENT BUDGET SUMMARY (ISD)

The department's projected spending is compared to prior years in the table below.

Category (\$ Thousands)	FY18	FY19	FY20		FY21	
	Actuals	Budget	Budget	% Chg	Budget	% Chg
Total Labor and Benefits	20,622	21,754	21,019	-3.4%	21,172	0.7%
Less: Capital Labor and Benefits	(570)	(160)	-	-100.0%	-	0.0%
Operating Labor and Benefits	20,051	21,594	21,019	-2.7%	21,172	0.7%
Contract Services	1,044	1,470	2,325	58.1%	2,182	-6.2%
Other Costs	7,081	7,586	7,059	-6.9%	8,077	14.4%
<b>Operating Total</b>	<b>28,176</b>	<b>30,650</b>	<b>30,403</b>	<b>-0.8%</b>	<b>31,430</b>	<b>3.4%</b>

## BUDGET HIGHLIGHTS

The department's operating budget in FY20 is decreasing \$0.2 million or 0.8 percent compared to FY19. In FY21, the budget will increase \$1.0 million or 3.4 percent compared to the prior fiscal year. Significant budget changes include:

### FY20

Total labor and benefit costs are decreasing \$0.7 million primarily due to fewer funded positions. Contract services are increasing \$0.9 million primarily due to centralizing District-wide IT resources in a single department. Other costs are decreasing \$0.5 million due to available equipment replacement funds (ERF) which will be used to purchase ongoing computer equipment replacement.

### FY21

Total labor and benefit costs will increase \$0.2 million primarily due to scheduled salary step increases. Contract services will decrease \$0.1 million primarily due to savings from the WiFi rollout to field staff which will occur in FY20. Other costs will increase \$1.0 million to replenish the ERF for future ongoing computer equipment replacement, and for upgrading Microsoft Office software.

## STAFFING SUMMARY

The table below summarizes the staffing changes and transfers that have occurred among departments.

Position Type	FY18	FY19	FY20	FTE Chg	FY21	FTE Chg
Full-Time	94.0	95.0	92.0	(3.0)	92.0	0.0
Limited-Term / Temp Construction	2.0	2.0	2.0	0.0	2.0	0.0
Intermittent	0.0	0.0	0.0	0.0	0.0	0.0
Temporary / Part-Time	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total FTE</b>	<b>96.0</b>	<b>97.0</b>	<b>94.0</b>	<b>(3.0)</b>	<b>94.0</b>	<b>0.0</b>

## STAFFING CHANGES

The table below summarizes the FTE changes followed by a brief description. The net change in cost represents the difference between the annual salary at the top step including benefits for the existing highest job classification versus the highest classification for the change.

FY	Action	From Classification(s)	To Classification(s)	Cost Chg	FTE Chg	Project/Program
2020	Flex Class	(LT) Inform Technology Intern II	(LT) Info Syst Support Analyst II / (LT) Inform Technology Intern II / (LT) ISSA I	69,317	0.0	Workload efficiencies
<b>FY20 TOTAL</b>				<b>69,317</b>	<b>0.0</b>	

In FY20, the department is temporarily reassigning a career intern to assist with the procurement of hardware and software, and asset management activities.



## **CUSTOMER AND COMMUNITY SERVICES DEPARTMENT (CUS)**

### **OVERVIEW**

The Customer and Community Services Department provides quality, responsive customer service through the use of efficient business practices, technology, and value-added programs and services to District customers and stakeholders guided by fairness, consistency, efficiency, and high standards of professionalism and fiscal responsibility.

### **DESCRIPTION OF SERVICES PROVIDED**

The department includes the Contact Center, Field Services, Customer Services Support, New Business Office, Water Conservation, Real Estate Services, and Contract Equity divisions. These divisions are the direct interface for external customers and internal stakeholders to support billing, payment, and service inquiries; field service operation requests; customer programs and services; Customer Information System administration, maintenance, systems integration and support; water conservation services and assistance; new service and development requests; property management and land acquisitions; mail distribution and payment processing; and promote equity and opportunities for District contracts and procurement.

### **FY20 & FY21 GOALS**

The department is primarily responsible for the Customer and Community Services Strategic Plan goal. Key department goals include:

- Providing responsive, quality service to meet and/or exceed customer expectations;
- Promoting programs and services that support or benefit the community, residents, and businesses;
- Updating the District's website to improve customer self-service capabilities and enhance the customer experience;
- Implementing a Water Conservation Management System to improve the efficiency of water conservation programs and customer accessibility to the programs;
- Locking in water efficiency gains and savings by promoting water conservation programs and services to all customer sectors, and community and business partners;
- Expanding the leasing program by leveraging land assets and developing a long-term real estate utilization plan to enhance business operations; and
- Promoting contract education and growing contract equity opportunities.

## DEPARTMENT BUDGET SUMMARY (CUS)

The department's projected spending is compared to prior years in the table below.

Category (\$ Thousands)	FY18 Actuals	FY19 Budget	FY20 Budget	% Chg	FY21 Budget	% Chg
Total Labor and Benefits	18,971	20,540	19,837	-3.4%	20,187	1.8%
Less: Capital Labor and Benefits	(2,226)	(2,364)	(314)	-86.7%	(324)	3.2%
Operating Labor and Benefits	16,744	18,176	19,523	7.4%	19,863	1.7%
Contract Services	244	349	271	-22.4%	353	30.5%
Other Costs	2,946	3,541	2,956	-16.5%	3,035	2.7%
<b>Operating Total</b>	<b>19,934</b>	<b>22,066</b>	<b>22,749</b>	<b>3.1%</b>	<b>23,251</b>	<b>2.2%</b>

## BUDGET HIGHLIGHTS

The department's operating budget in FY20 is increasing \$0.7 million or 3.1 percent compared to FY19. In FY21, the budget will increase \$0.5 million or 2.2 percent compared to the prior fiscal year. Significant budget changes include:

### FY20

Total labor and benefit costs are decreasing \$0.7 million primarily due to employees with lower starting salaries than employees they replaced and a slower than projected rise in benefits cost. Capital labor and benefit costs are decreasing \$2.1 million due to a shift of ongoing water conservation efforts to operating. Operating labor and benefit costs are increasing but are offset by the lower starting salaries and the slower than projected rise in benefits cost. Contract services are decreasing \$0.08 million primarily due to the District-wide centralization of IT-related contracts. Other costs are decreasing \$0.6 million primarily due to lower vehicle use charges (VUC) and printing and distribution cost for Proposition 218 which occur in the second year of the biennial budget.

### FY21

Total labor and benefit costs will increase \$0.4 million primarily due to scheduled salary step increases. Contract services are increasing \$0.08 million due to check payment processing maintenance support. Other costs will increase \$0.08 million primarily for Proposition 218 notice costs.

## STAFFING SUMMARY

The table below summarizes the transfers that have occurred among departments. There are no other staffing changes.

Position Type	FY18	FY19	FY20	FTE Chg	FY21	FTE Chg
Full-Time	124.0	123.0	125.0	2.0	125.0	0.0
Limited-Term / Temp Construction	0.0	0.0	0.0	0.0	0.0	0.0
Intermittent	3.0	3.0	3.0	0.0	3.0	0.0
Temporary / Part-Time	13.5	13.5	13.5	0.0	13.5	0.0
<b>Total FTE</b>	<b>140.5</b>	<b>139.5</b>	<b>141.5</b>	<b>2.0</b>	<b>141.5</b>	<b>0.0</b>

## **HUMAN RESOURCES DEPARTMENT (HRD)**

### **OVERVIEW**

The Human Resources Department recruits, develops, and retains a diverse, well-qualified and professional workforce that reflects the values of EBMUD, supports the District's core mission, and leads the organization in positive employee relations, talent management, succession planning and employee engagement.

### **DESCRIPTION OF SERVICES PROVIDED**

The department is comprised of Diversity and Inclusion, Employee Relations, Employee Services, Recruitment and Classification, and Employee and Organizational Development divisions. These divisions administer the District's retirement system, deferred compensation programs and employee benefits; provide guidance to effectively resolve grievances, as well as facilitate labor contract negotiations; implement training and development opportunities to support leadership and managerial skill enhancement; administer a performance recognition program that acknowledges employee contributions toward meeting District goals; steward a "grow our own" strategy to address skills shortages by developing employees to meet workforce demands; respond to discrimination and harassment complaints; work with the community on outreach efforts to attract a diverse applicant pool; and create and implement workforce development programs to recruit and onboard highly qualified and diverse employees.

### **FY20 & FY21 GOALS**

The department is primarily responsible for leading the Workforce Planning and Development Strategic Plan goal. Key department goals include:

- Coordinating with the District's departments, community organizations and schools to increase diversity in candidates for District jobs including but not limited to internships and apprenticeships;
- Providing Manager and Supervisor Training (MAST) programs that provide the tools leaders need to do their jobs more effectively in a changing business environment;
- Providing team-building, organizational development, and change management assistance to divisions and departments;
- Identifying and implementing a new Human Resource Information System (HRIS) to modernize employee services;
- Completing recruitments in a timely manner to expeditiously fill vacancies;
- Updating the District's job classification descriptions; and
- Continuing to inspire employee engagement in all areas of the District's work to support the mission of the District.

## DEPARTMENT BUDGET SUMMARY (HRD)

The department's projected spending is compared to prior years in the table below.

Category (\$ Thousands)	FY18	FY19	FY20		FY21	
	Actuals	Budget	Budget	% Chg	Budget	% Chg
Total Labor and Benefits	8,424	9,475	9,815	3.6%	9,780	-0.4%
Less: Capital Labor and Benefits	(122)	-	(545)	0.0%	(571)	4.8%
Operating Labor and Benefits	8,302	9,475	9,270	-2.2%	9,209	-0.7%
Contract Services	1,499	1,722	1,760	2.2%	1,729	-1.8%
Other Costs	696	758	819	7.9%	857	4.7%
<b>Operating Total</b>	<b>10,497</b>	<b>11,955</b>	<b>11,848</b>	<b>-0.9%</b>	<b>11,794</b>	<b>-0.5%</b>

## BUDGET HIGHLIGHTS

The department's operating budget in FY20 is decreasing \$0.1 million or 0.9 percent compared to FY19. In FY21, the operating budget will decrease \$0.05 million or 0.5 percent. Significant budget changes include:

### FY20

Total labor and benefit costs are increasing \$0.3 million due to an increase in funded positions to meet workload needs. Capital labor and benefit costs are increasing \$0.5 million due a higher portion of labor allocated to support implementation of the HRIS project. Contract services costs are increasing \$0.04 million primarily due to an audit of dependent coverage on employee benefit plans. Other costs are increasing \$0.06 million primarily due to the tuition reimbursement program, and MAST classes and materials to address required staff training.

### FY21

Total labor and benefit costs will decrease \$0.04 million due to a deletion of a limited-term position no longer needed. Contract services costs will decrease \$0.03 million primarily due to completion of the dependent coverage audit.

## STAFFING SUMMARY

The table below summarizes the staffing changes and transfers that have occurred among departments.

Position Type	FY18	FY19	FY20	FTE Chg	FY21	FTE Chg
Full-Time	49.0	49.0	48.0	(1.0)	48.0	0.0
Limited-Term / Temp Construction	5.0	6.0	8.0	2.0	8.0	0.0
Intermittent	0.0	0.0	0.0	0.0	0.0	0.0
Temporary / Part-Time	4.5	4.5	4.5	0.0	4.5	0.0
<b>Total FTE</b>	<b>58.5</b>	<b>59.5</b>	<b>60.5</b>	<b>1.0</b>	<b>60.5</b>	<b>0.0</b>

## STAFFING CHANGES

The table below summarizes the FTE changes excluding transfers among departments. The net change in cost represents the difference between the annual salary at the top step including benefits for the existing highest job classification versus the highest classification for the change.

FY	Action	From Classification(s)	To Classification(s)	Cost Chg	FTE Chg	Project/Program
2020	Add		(TC) HRIS Analyst II	197,296	1.0	HRIS Project
2020	Add		(TC) Human Resources Analyst II / I	197,296	1.0	HRIS Project
2020	Add		Senior Human Resources Analyst	217,700	1.0	Employee Workforce Development and Values Advocate
2020	Reallocate	(LT) Special Employment Program Trainee (SEP)	(LT) Ranger Naturalist I	49,913	0.0	Create bridge for qualified Ranger Naturalist candidates
2020	Delete	(LT) Senior Human Resources Analyst		(241,890)	(1.0)	LT expired
<b>FY20 TOTAL</b>				<b>420,315</b>	<b>2.0</b>	
2021	Delete	(LT) Administrative Clerk, Conf		(120,188)	(1.0)	Workload efficiencies
<b>FY21 TOTAL</b>				<b>(120,188)</b>	<b>(1.0)</b>	

In FY20, the department is adding two temporary construction FTEs to support the implementation of the HRIS project and one full-time FTE to support workforce development and training, and to support Values Advocate efforts. The reallocation of a limited-term FTE from a Special Employment Program Trainee to a Ranger Naturalist I is needed to create a bridge for qualified Ranger Naturalist candidates. The department is deleting one limited-term FTE as the limited-term status has expired.

In FY21, the department is deleting one limited-term FTE position due to workload efficiencies.

## **OFFICE OF THE GENERAL COUNSEL (OGC)**

### **OVERVIEW**

The Office of the General Counsel (OGC) provides the legal advice and assistance necessary to implement the District's mission, policies, and programs in a manner consistent with the law and to take charge of litigation and other legal matters in which the District is a party or in which it is legally interested.

### **DESCRIPTION OF SERVICES PROVIDED**

The department provides legal assistance and litigation support to the Board, General Manager and staff in such areas as: resources law; municipal and public law; environmental law; public works contracting; construction and real estate law; personnel, benefits, retirement and labor law; risk management and insurance; public finance and governmental law; tort law; and rates, regulations, and public policy matters.

### **FY20 & FY21 GOALS**

Key department goals include:

- Providing the District, its officers, and its employees with competent, responsible, and effective representation in all proceedings in which the District is a party or has an interest, and obtain the best results possible given the facts and law applicable to the specific case;
- Assuring that all documents with legal significance presented to the OGC for review, or are originally prepared by OGC, accomplish the purpose for which they are intended, protect the District from legal risk to the full extent staff considers appropriate for the transaction, and are written in clear and understandable language in an appropriate legal form;
- Providing accurate, clear, and practical oral legal advice that is responsible to the questions and facts presented;
- Providing accurate, clear, and practical written legal memoranda and opinions that are thoroughly researched, timely, and in an appropriately professional form;
- Providing forceful and persuasive advocacy on behalf of the District in non-judicial settings when requested to do so;
- Assuring that all legal services provided to the District are cost-effective, responsive to the directions of the Board, and professionally competent; and
- Adhering to the highest standards of professional conduct and legal ethics including those standards set forth in the Rules of Professional Conduct.



## DEPARTMENT BUDGET SUMMARY (OGC)

The department's projected spending is compared to prior years in the table below.

Category (\$ Thousands)	FY18	FY19	FY20		FY21	
	Actuals	Budget	Budget	% Chg	Budget	% Chg
Total Labor and Benefits	3,579	3,944	3,977	0.8%	3,985	0.2%
Less: Capital Labor and Benefits	-	-	-	0.0%	-	0.0%
Operating Labor and Benefits	3,579	3,944	3,977	0.8%	3,985	0.2%
Contract Services	623	750	750	0.0%	750	0.0%
Other Costs	152	235	192	-18.3%	200	4.2%
<b>Operating Total</b>	<b>4,354</b>	<b>4,930</b>	<b>4,920</b>	<b>-0.2%</b>	<b>4,936</b>	<b>0.3%</b>

## BUDGET HIGHLIGHTS

The department's operating budget in FY20 is decreasing \$0.01 million or 0.2 percent compared to FY19. In FY21, the budget will increase \$0.02 million or 0.3 percent compared to the prior fiscal year. Significant budget changes include:

### FY20

Total labor and benefits are increasing \$0.03 million primarily due to scheduled salary step increases. Other costs are decreasing \$0.04 million due to efficiency savings.

### FY21

Total labor and benefits will increase \$0.01 million due to scheduled salary step increases.

## STAFFING SUMMARY

The table below summarizes staffing and there are no other changes.

Position Type	FY18	FY19	FY20	FTE Chg	FY21	FTE Chg
Full-Time	16.0	16.0	16.0	0.0	16.0	0.0
Limited-Term / Temp Construction	0.0	0.0	0.0	0.0	0.0	0.0
Intermittent	0.0	0.0	0.0	0.0	0.0	0.0
Temporary / Part-Time	1.0	1.0	1.0	0.0	1.0	0.0
<b>Total FTE</b>	<b>17.0</b>	<b>17.0</b>	<b>17.0</b>	<b>0.0</b>	<b>17.0</b>	<b>0.0</b>

## **WATER RECYCLING PROGRAM (WRP)**

### **OVERVIEW**

The Water Recycling Program develops and implements projects that provide recycled water for appropriate uses by the District and its customers to reduce the demand on high quality drinking water supplies.

### **DESCRIPTION OF SERVICES PROVIDED**

The program operates and maintains the North Richmond Water Reclamation Plant and the Richmond Advance Recycled Expansion (RARE) facility that provide recycled water for use in the Chevron refinery, and the East Bayshore Recycled Water treatment facility that provides recycled water to customers for irrigation applications. While this program is managed and budgeted under the Water System, the Wastewater Department is responsible for the ongoing operations and maintenance of the recycled WTPs.

### **FY20 & FY21 GOALS**

The department supports the Long-Term Water Supply Strategic Plan goal. Key department goals include:

- Continuing to operate and maintain the three recycled water treatment facilities (RARE, North Richmond, and East Bayshore) to meet regulatory standards for recycled water and to maximize the production;
- Maintaining contractual obligations with Chevron; and
- Continuing to offset the use of drinking water for non-potable applications as part of the District's water recycling goal.

## DEPARTMENT BUDGET SUMMARY (WRP)

The department's projected spending is compared to prior years in the table below.

Category (\$ Thousands)	FY18 Actuals	FY19 Budget	FY20 Budget	% Chg	FY21 Budget	% Chg
Total Labor and Benefits	1,847	1,716	1,806	5.2%	1,803	-0.2%
Less: Capital Labor and Benefits	(4)	-	(4)	0.0%	(4)	0.0%
Operating Labor and Benefits	1,843	1,716	1,802	5.0%	1,799	-0.2%
Contract Services	63	83	92	11.1%	92	0.1%
Other Costs	2,495	3,845	3,926	2.1%	4,045	3.0%
<b>Operating Total</b>	<b>4,400</b>	<b>5,644</b>	<b>5,821</b>	<b>3.1%</b>	<b>5,936</b>	<b>2.0%</b>

## BUDGET HIGHLIGHTS

The department's FY20 operating budget is increasing \$0.2 million or 3.1 percent compared to FY20. In FY21, the operating budget will increase \$0.1 million or 2.0 percent. Significant budget changes include:

### FY20

Total labor and benefit costs are increasing \$0.09 million primarily due to employees with higher starting salaries than budgeted in the prior fiscal year but are offset by a slower than projected rise in benefits cost. Contract services are increasing \$0.01 million due to RARE membrane process support and training for microfiltration and reverse osmosis systems at RARE Water Treatment Plant. Other costs are increasing \$0.08 million primarily due to discharge fees, parts and materials, chemicals, and energy for the North Richmond Water Reclamation facility which is expected to be operational for the entire fiscal year. The facility had not been operational due to construction at West County Water District which impacted their effluent water quality and made it unsuitable for treatment.

### FY21

Other costs will increase \$0.1 million primarily due to discharge fees, chemical, and energy costs.

## STAFFING SUMMARY

The table below summarizes staffing and there are no other changes.

Position Type	FY18	FY19	FY20	FTE Chg	FY21	FTE Chg
Full-Time	8.0	8.0	8.0	0.0	8.0	0.0
Limited-Term / Temp Construction	0.0	0.0	0.0	0.0	0.0	0.0
Intermittent	0.0	0.0	0.0	0.0	0.0	0.0
Temporary / Part-Time	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total FTE</b>	<b>8.0</b>	<b>8.0</b>	<b>8.0</b>	<b>0.0</b>	<b>8.0</b>	<b>0.0</b>

## ADMINISTRATION DEPARTMENT (ADM)

### OVERVIEW

The Administration Department is currently unstaffed, and the functions of the department have been distributed to the Customer and Community Services Department and the Human Resources Department.

### DESCRIPTION OF SERVICES PROVIDED

The department has the budget for District-wide memberships in professional and trade organizations.

### FY20 & FY21 GOALS

The department does not have any Strategic Plan goals in FY20 and FY21.

### DEPARTMENT BUDGET SUMMARY

The department's projected spending is compared to prior years in the table below.

Category (\$ Thousands)	FY18	FY19	FY20		FY21	
	Actuals	Budget	Budget	% Chg	Budget	% Chg
Total Labor and Benefits	-	-	-	0.0%	-	0.0%
Less: Capital Labor and Benefits	-	-	-	0.0%	-	0.0%
Operating Labor and Benefits	-	-	-	0.0%	-	0.0%
Contract Services	-	-	-	0.0%	-	0.0%
Other Costs	344	377	396	5.1%	403	1.9%
<b>Operating Total</b>	<b>344</b>	<b>377</b>	<b>396</b>	<b>5.1%</b>	<b>403</b>	<b>1.9%</b>

### BUDGET HIGHLIGHTS

#### FY20

The department has no personnel or contract budget due to transferring services to other departments. Other costs are increasing due to new memberships and a projected rise in cost for professional dues.

#### FY21

The District membership budget remains flat.

## STAFFING SUMMARY (ADM)

The table below summarizes staffing and there are no other changes.

Position Type	FY18	FY19	FY20	FTE Chg	FY21	FTE Chg
Full-Time	2.0	2.0	2.0	0.0	2.0	0.0
Limited-Term / Temp Construction	0.0	0.0	0.0	0.0	0.0	0.0
Intermittent	0.0	0.0	0.0	0.0	0.0	0.0
Temporary / Part-Time	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total FTE</b>	<b>2.0</b>	<b>2.0</b>	<b>2.0</b>	<b>0.0</b>	<b>2.0</b>	<b>0.0</b>

## STAFFING

### Appointment Types

The majority of the workforce is comprised of full-time civil service or full-time civil service exempt positions. Limited-term positions are intended to augment regular staff to accomplish extra work or other operational programs or activities of a limited duration, with appointments for a maximum of 4 years. Temporary construction positions are also of a limited and specified duration typically associated with capital projects. Intermittent positions represent the smallest number of appointment types and typically work 32 hours instead of 40 hours per week. Part-time positions are normally restricted to 832 hours per year. Temporary positions are limited to a 6-month duration, and are full-time during that duration.

The table below provides the full-time equivalent (FTE) by department and compares the changes from year-to-year. Depending upon the appointment type, the FTE value will be different. Full-time, limited-term and temporary construction appointment types are equivalent to 1.0 FTE; intermittent appointment types are equivalent to 0.75 FTE; part-time and temporary appointment types are equivalent to 0.5 FTE.

<b>FY20 &amp; FY21 Department Staffing (FTE)</b>					
<b>Department</b>	<b>FY19 Budget</b>	<b>FY20 Budget</b>	<b>FTE Chg</b>	<b>FY21 Budget</b>	<b>FTE Chg</b>
Operations & Maintenance Support	56.0	54.0	(2.0)	53.0	(1.0)
Maintenance and Construction	742.5	769.5	27.0	769.5	0.0
Water Operations	186.5	188.75	2.25	187.75	(1.0)
Water Resources	36.5	38.0	1.5	38.0	0.0
Natural Resources	68.5	66.5	(2.0)	66.5	0.0
Engineering & Construction	275.5	285.5	10.0	285.5	0.0
Office of the General Manager	25.5	26.5	1.0	26.5	0.0
Finance	99.5	102.5	3.0	102.5	0.0
Information Systems	97.0	94.0	(3.0)	94.0	0.0
Customer & Community Services	139.5	141.5	2.0	141.5	0.0
Human Resources	59.5	60.5	1.0	60.5	0.0
Office of the General Counsel	17.0	17.0	0.0	17.0	0.0
Water Recycling Program	8.0	8.0	0.0	8.0	0.0
Administration	2.0	2.0	0.0	2.0	0.0
<b>Water System Total</b>	<b>1,813.5</b>	<b>1,854.25</b>	<b>40.75</b>	<b>1,852.25</b>	<b>(2.0)</b>

In FY20, a net total of 40.75 FTEs are being added to the Water System including the transfer of one FTE from the Wastewater Department to the Office of the General Manager.

In FY21, two full-time FTEs will be deleted, one from Human Resources and the second from Water Operations.

For more detail description of staffing changes, please see the specific department section in this chapter.



## Bargaining Unit Changes

Tables below show the net change in bargaining unit status of authorized FTEs represented by different unions, management/confidential, non-represented groups, and civil service exempt positions. The tables reflect Board of Directors authorized additions and deletions in FY20 & FY21 and correspond to the staffing changes table in each department.

<b>FY20 vs. FY19 Net Change in Bargaining Unit Status (FTE)</b>							
<b>Department</b>	<b>Local 2019</b>	<b>Local 444</b>	<b>Local 21</b>	<b>Local 39</b>	<b>MGR/ CNF</b>	<b>NRP</b>	<b>EXMPT</b>
Operations & Maintenance Support							
Maintenance and Construction		22	3				
Water Operations	2.25						
Water Resources	0.50						
Natural Resources	(1)						
Engineering & Construction	10						
Office of the General Manager					1		
Finance	2						
Information Systems							
Customer & Community Services							
Human Resources	(1)				2		
Office of the General Counsel							
Water Recycling Program							
Administration							
<b>Total Net Change</b>	<b>12.75</b>	<b>22</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>

<b>FY21 vs. FY20 Net Change in Bargaining Unit Status (FTE)</b>							
<b>Department</b>	<b>Local 2019</b>	<b>Local 444</b>	<b>Local 21</b>	<b>Local 39</b>	<b>MGR/ CNF</b>	<b>NRP</b>	<b>EXMPT</b>
Operations & Maintenance Support							
Maintenance and Construction							
Water Operations	(1)						
Water Resources							
Natural Resources							
Engineering & Construction							
Office of the General Manager							
Finance							
Information Systems							
Customer & Community Services							
Human Resources					(1)		
Office of the General Counsel							
Water Recycling Program							
Administration							
<b>Total Net Change</b>	<b>(1)</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>(1)</b>	<b>0</b>	<b>0</b>

## **DEBT SERVICE AND FINANCING**

This section describes the Water System's current and projected debt obligations, current credit ratings, and adherence to the District's debt financing policies.

The District incurs debt to finance projects or purchase, repair or replace assets which will have useful lives equal to or greater than the related debt. Issuance of revenue supported debt is authorized by the Board of Directors, subject to a referendum process. Individual revenue bond issues are authorized by the Board of Directors.

The annual debt service principal and interest payments are charged to the operating budget. However, debt is only issued to finance capital investment activities.

### **Outstanding Debt**

The Water System will have a total outstanding debt of \$2.71 billion as of June 30, 2019. The District's debt issues are summarized on the following page and discussed in detail thereafter.

**Outstanding Debt** (\$ Thousands)  
As of June 30, 2019

Issue	Date of Issue	Last Maturity	Amount Issued	Debt Outstanding
<b>LONG-TERM DEBT</b>				
<b>Revenue Bonds</b>				
Series 2008A	3/20/2008	6/1/2038	322,525	105,250
Series 2010A	2/3/2010	6/1/2036	192,830	2,090
Series 2010B (Build America Bonds)	2/23/2010	6/1/2040	400,000	400,000
Series 2012A	10/10/2012	6/1/2037	191,750	81,750
Series 2012B	11/13/2012	6/1/2026	358,620	178,740
Series 2013A	3/5/2013	6/1/2021	48,670	14,780
Series 2014A	6/11/2014	6/1/2035	128,315	128,315
Series 2014B	6/11/2014	6/1/2030	242,730	216,985
Series 2014C	6/26/2014	6/1/2044	75,000	75,000
Series 2015A	3/3/2015	6/1/2037	429,360	429,360
Series 2015B	6/17/2015	6/1/2045	74,335	74,335
Series 2015C	6/17/2015	6/1/2045	110,715	110,715
Series 2017A	6/22/2017	6/1/2045	185,355	185,355
Series 2017B	6/22/2017	6/1/2037	309,665	297,130
<b>Total Revenue Bonds</b>			<b>3,069,870</b>	<b>2,299,805</b>
<b>General Obligations Bonds</b>			<b>0</b>	<b>0</b>
<b>Loans</b>				
State Loan (parity)	1/1/2003	1/1/2024	2,188	590
State Loan (parity)	5/22/2008	4/1/2028	20,100	10,093
State Loan (parity) <sup>1</sup>	12/14/2017	7/1/2048	18,947	18,947
State Loan (parity) <sup>1</sup>	4/18/2018	7/1/2049	18,042	18,042
<b>Total Loans</b>			<b>59,276</b>	<b>47,671</b>
<b>Total Long-Term Debt</b>			<b>3,129,146</b>	<b>2,347,476</b>
<b>SHORT-TERM DEBT</b>				
<b>Commercial Paper</b>	Various	Various	<b>N/A</b>	<b>359,800</b>
<b>TOTAL OUTSTANDING DEBT</b>				<b>2,707,276</b>

<sup>1</sup> For the 2017 and 2018 state loans, Debt Outstanding represents the amount expected to be outstanding if the loans are fully drawn down by June 30, 2019.

The District plans to issue \$204.5 million in revenue bonds to support capital investment activities in FY20. The budget also includes a second bond issue of \$160.0 million in FY21.

## **Debt Service**

The Water System total outstanding debt of \$2.71 billion as of June 30, 2019 is projected to cost the District \$1.9 billion in interest payments over the next 31 years, as detailed in the table below. The table does not include additional debt expected to be issued at the end of FY19 or the beginning of FY20. The principal payments below do not include the payments of commercial paper principal, as there is no final maturity associated with the notes.

Interest payments on synthetic fixed-rate debt were calculated at their associated swap rates. Interest on commercial paper (CP) are projected at 3.0 percent.

<b>Projected Debt Service on Current Outstanding Debt</b> (\$ Thousands)			
<b>Fiscal Year</b>	<b>Principal</b>	<b>Interest</b>	<b>Debt Service</b>
2020	64,983	125,013	189,996
2021	66,978	122,026	189,003
2022	69,778	118,968	188,746
2023	73,119	115,681	188,800
2024	76,321	112,178	188,498
2025	79,913	108,558	188,471
2026	81,503	104,747	186,250
2027	85,509	100,745	186,255
2028	89,667	96,587	186,253
2029	94,080	92,171	186,251
2030	98,719	87,534	186,252
2031	103,618	82,635	186,253
2032	108,578	77,712	186,290
2033	113,778	72,549	186,327
2034	118,948	67,413	186,361
2035	124,334	62,070	186,403
2036	130,205	56,238	186,443
2037	136,651	49,834	186,485
2038	143,818	42,895	186,713
2039	151,490	35,082	186,572
2040	67,638	26,441	94,078
2041	51,531	22,894	74,425
2042	53,949	20,473	74,422
2043	56,488	17,936	74,423
2044	59,067	15,357	74,424
2045	40,616	12,658	53,274
2046	1,486	10,891	12,377
2047	1,512	10,866	12,377
2048	1,537	10,840	12,377
2049	1,157	10,814	11,971
2050	382	10,797	11,179
<b>TOTAL</b>	<b>2,347,348</b>	<b>1,900,604</b>	<b>4,247,952</b>

The debt service in the table above is less than the budgeted debt service because the latter includes:

- Payments on new debt issues in FY20 and FY21, and
- Additional costs for liquidity fees, re-marketing fees, basis spread, and debt service administration.

## Debt Ratings

Credit risk is the risk that the issuer of an investment, such as a revenue bond, will not fulfill its obligation to the holder of the investment. Credit ratings are assigned to bonds by Nationally Recognized Statistical Credit Rating Organizations (NRSROs) based on published methodologies. The ratings reflect the organizations' opinions about the issuer's ability and willingness to meet its financial obligations on time and in full.

The District's strong credit ratings provide tangible benefits to ratepayers in the form of reduced debt service cost. A strong credit rating provides better access to capital markets, lower interest rates, better terms on debt, and access to a greater variety of debt products. Prudent financial management policies have contributed to the District's strong ratings shown in the table below.

As of January 1, 2019, ratings on the Water System's debt were as follows:

<b>Water System Debt Ratings</b>			
<b>Debt by Type</b>	<b>Standard &amp; Poor's</b>	<b>Moody's Investors Service</b>	<b>Fitch</b>
Fixed Rate Revenue Bonds	AAA	Aa1	AA+
Variable Rate Revenue Bonds			
Long-term Underlying Rating	AAA	Aa1	--
Short-term Rating	A-1+	VMIG-1	--
Commercial Paper	A-1+	P-1	F1+

## **Debt Management Policy and Debt Service Coverage**

The District is subject to legal debt limits prescribed in the Municipal Utility District (MUD) Act. The MUD Act describes three types of legal limitations: general debt limits, revenue bond limits, and short-term borrowing limits.

The District's general debt indebtedness cannot exceed the ordinary annual income and revenue of the District without a two-thirds approval of the voters. However, revenue bonds are not included in general debt limits.

The District is authorized to issue revenue bonds with the approval of a resolution from the Board of Directors, subject to a 60-day referendum period. The resolution specifies the maximum principal amount of bonds that may be issued pursuant to the authorization. The District's Board of Directors also approves individual series of revenue bonds issued under the broader authorization.

The MUD Act authorizes the District to issue short-term indebtedness without an election of the voters. The amount of short-term borrowing cannot exceed the lesser of 1) the annual average total revenue of the three preceding years or 2) twenty-five percent of the District's total outstanding bonds. This provision is substantially the same as the District's internal policy discussed below.

The District has also established its own policy regarding debt management (Policy 4.02: Cash Reserves and Debt Management – see Appendix). The purpose of the debt policy is to maintain a balance between current funding sources and debt financing over each five-year plan horizon in order to retain the District's financing flexibility and achieve the lowest cost of financing.

The District's debt management policy is to:

- a) maintain an annual revenue bond debt service coverage ratio of at least 1.6 times;
- b) limit debt-funded capital to no more than 65 percent of the total capital program over each five-year planning period; and
- c) limit commercial paper / variable rate debt to 25 percent of outstanding long-term debt.

## **Debt Service Coverage Ratio**

The debt service coverage policy ensures that the District has sufficient annual operating revenues to pay its operating expenses and meet its debt service obligations on its revenue bonds and other parity debt. The revenue bond debt service coverage ratio is defined as the District's net operating revenue (current year's operating revenue less the current year's operating expenses) divided by the current year's debt service on all revenue bonds and other parity debt. Net revenues are reduced by any Rate Stabilization Fund deposits and increased by any withdrawals. In FY20 and FY21, the projected debt coverage ratios are 1.88 and 1.89, respectively.



## Debt-Funded Capital

The percentage of the capital program that is funded by debt over the five-year planning period FY20-24 is projected to average 49.4 percent, which is below the financial policy maximum target of 65 percent. The debt percentage funding levels for FY20 and FY21 are shown in the table below.

<b>Projected Debt Percentage of Funding</b> (\$ Millions)		
	<b>FY20</b>	<b>FY21</b>
<b>Expenditures</b>		
Capital Cash Flow	297.7	345.5
Administration of Capital	<u>40.0</u>	<u>40.0</u>
<b>Total Expenditures</b>	<b>337.7</b>	<b>385.5</b>
<b>Project Funding</b>		
New Bond Proceeds	200.4	156.8
Loans Proceeds	-	-
Commercial Paper	-	-
Construction Fund	<u>-</u>	<u>-</u>
<b>Total Resources</b>	<b>200.4</b>	<b>156.8</b>
<b>Debt Percentage of Funding</b>	59.3%	40.7%

## Commercial Paper and Variable Rate Debt Ratio

The District has authorized a short-term commercial paper (CP) borrowing program consistent with the MUD Act and the District's debt management policy. Under this program, the District may issue commercial paper notes at prevailing interest rates for periods of not more than 270 days from the date of issuance. The program is supported by liquidity agreements. The Water System CP is secured by a pledge of the Water System's net revenues, subordinate to the Water System's revenue bonds.

As of June 30, 2019, \$359.8 million of Water System CP is projected to be outstanding under the program. Water System CP will comprise less than 14 percent of the \$2.71 billion in total outstanding debt.

Water System outstanding variable rate debt projected as of June 30, 2019 will be approximately \$105.3 million. Since the beginning of FY14, the District has converted over \$340.0 million of its variable rate debt into fixed rate debt by terminating existing interest rate swap contracts and replacing the underlying variable rate bonds with fixed rate bonds. Going forward, the District expects to finance its capital program through a combination of available funds and fixed-rate debt.

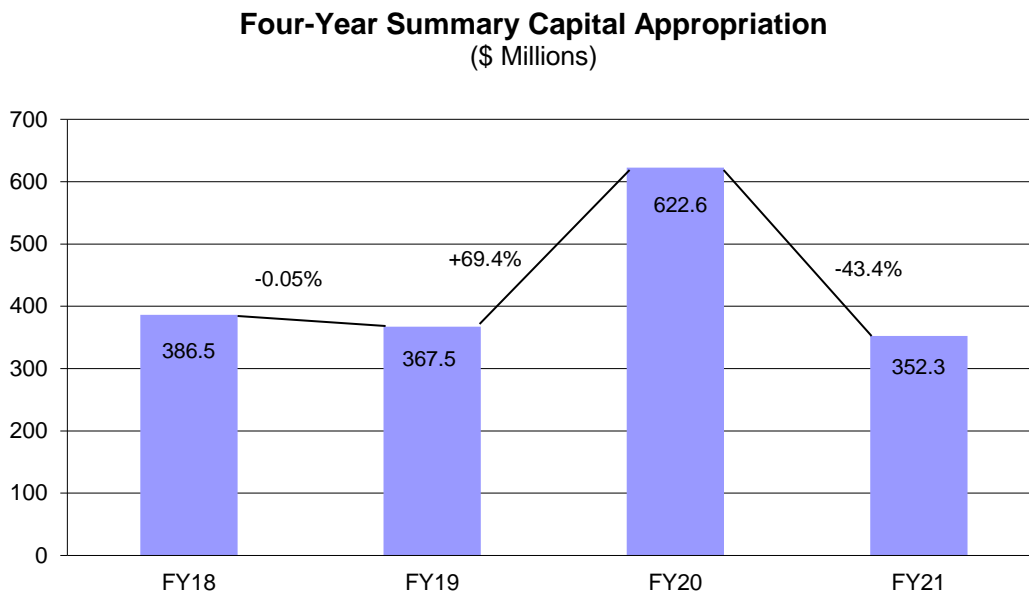
## CAPITAL IMPROVEMENT PROGRAM

The CIP consists of projects that typically result in the construction of new facilities, or the rehabilitation or upgrade of existing facilities. Project costs include all expenditures required to study, plan, design, construct or upgrade new or existing facilities. Projects can also include large equipment purchases and the creation or replacement of computer systems.

### Capital Appropriation

Capital appropriations are the amounts approved by the Board to be spent on projects in the CIP. Since these appropriations are often spent over multiple years, the amounts appropriated for each fiscal year will vary depending upon project scope and timing, and any unspent appropriation a project may already have.

The Water System's FY20 appropriation totals \$622.6 million, an increase of \$255.1 million or 69 percent from FY19. In FY21, the appropriation totals \$352.3 million, a decrease of \$270.4 million or 43 percent from FY20. The Water System appropriations for FY20 and FY21 and the prior two years are summarized below.



The FY20-24 Water System CIP requires \$2.24 billion in project appropriations, an increase of \$551.6 million or 33 percent from the FY18-22 CIP. The increase is primarily due to increased appropriation needs of the Maintaining Infrastructure Strategy for replacing deteriorated pipelines and rehabilitating pumping plants.

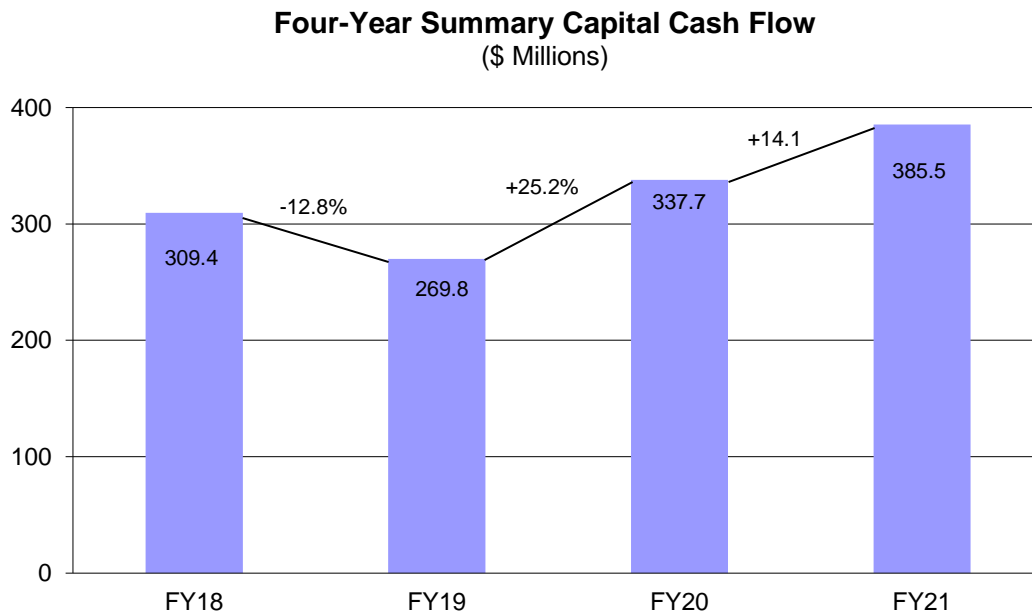
The Water System appropriations focus on the Maintaining Infrastructure Strategy which comprises 48 percent of the CIP appropriations. All Water System appropriations by strategy are summarized below.

<b>FY18-22 vs. FY20-24 Appropriation</b> <b>Capital Improvement Program by Strategy</b> (\$ Thousands)				
Strategy	Appropriation		\$ Chg	% Chg
	FY18-22	FY20-24		
Extensions & Improvements	194,672	497,676	303,004	156%
Facilities, Services & Equipment	89,269	78,053	(11,216)	-13%
Maintaining Infrastructure	790,748	970,057	179,309	23%
Regulatory Compliance	40,068	46,266	6,198	15%
Resource Management	12,016	9,294	(2,722)	-23%
Water Quality	147,023	186,217	39,194	27%
Water Supply	186,345	218,503	32,158	17%
Non-Program Specific	26,500	31,564	5,064	19%
<b>Strategy Subtotal</b>	<b>1,486,641</b>	<b>2,037,630</b>	<b>550,989</b>	<b>37%</b>
Administration of Capital	207,345	207,970	625	0%
<b>Total Water</b>	<b>1,693,986</b>	<b>2,245,600</b>	<b>551,614</b>	<b>33%</b>

## Capital Cash Flow

Capital cash flows are the amounts projected to be spent each fiscal year on projects in the CIP. The amount of cash flow spending varies each year as projects progress from one phase to another, such as from planning to design and then construction, and as existing projects are completed and new ones started.

The Water System's FY20 cash flow totals \$337.7 million, an increase of \$67.9 million or 25 percent from FY19. In FY21, the cash flow totals \$385.5 million, an increase of \$47.8 million or 14 percent from FY20.



The FY20-24 CIP identifies \$1.9 billion in projected cash flow spending, an increase of \$394.3 million or 26 percent compared to the FY18-22 CIP. The increase is primarily attributable to the Maintaining Infrastructure Strategy for replacing deteriorated water distribution pipelines, service laterals and large diameter transmission pipelines; and continuing to retrofit the temperature anchors on Mokelumne Aqueduct #1. Under the Water Quality Strategy, new work was identified regarding water treatment plant upgrades.

All Water System cash flows by strategy are summarized below.

<b>FY18-22 vs. FY20-24 Cash Flows</b> <b>Capital Improvement Program by Strategy</b> (\$ Thousands)				
Strategy	Cash Flows		\$ Chg	% Chg
	FY18-22	FY20-24		
Extensions & Improvements	188,805	218,211	29,406	16%
Facilities, Services & Equipment	85,410	113,561	28,151	33%
Maintaining Infrastructure	623,807	847,980	224,172	36%
Regulatory Compliance	70,808	61,641	(9,167)	-13%
Resource Management	11,331	11,462	131	1%
Water Quality	116,811	226,463	109,652	94%
Water Supply	197,309	208,620	11,311	6%
Non-Program Specific	-	-	-	0%
<b>Strategy Subtotal</b>	<b>1,294,281</b>	<b>1,687,938</b>	<b>393,657</b>	<b>30%</b>
Administration of Capital	207,345	207,970	625	0%
<b>Total Water</b>	<b>1,501,626</b>	<b>1,895,908</b>	<b>394,282</b>	<b>26%</b>

In accordance with the District's ten-year capital planning horizon, approximately \$2.4 billion of work has been tentatively identified for FY25-29. These future year estimates will be revised as studies are completed, priorities are redefined, and new needs emerge. Therefore, the focus is on the first five years of the CIP.

Select programs and projects are discussed in more detail in the following pages. In addition, a description of each project including recent accomplishments and future work is provided in a supplemental volume of this budget book for every project that has work planned in FY20-24.

## Capital Labor

The capital labor component of the CIP totals over \$90 million per fiscal year. The following table shows the capital labor and benefits budget.

<b>Capital Labor By Department</b> (\$ Thousands)						
	<b>FY18 Actuals</b>	<b>FY19 Budget</b>	<b>FY20 Budget    % Chg</b>		<b>FY21 Budget    % Chg</b>	
Operations & Maintenance Support	768	686	626	-8.8%	637	1.9%
Maintenance and Construction	37,941	41,885	46,088	10.0%	47,925	4.0%
Water Operations	1,763	1,325	2,251	69.9%	2,269	0.8%
Water Resources	2,116	1,664	1,866	12.1%	1,880	0.8%
Natural Resources	134	15	66	348.0%	67	0.7%
Engineering & Construction	34,664	38,777	37,932	-2.2%	38,153	0.6%
Office of the General Manager	-	-	-	0.0%	-	0.0%
Finance	506	-	1,778	0.0%	1,829	2.9%
Information Systems	570	160	-	-100.0%	-	0.0%
Customer & Community Services	2,226	2,364	314	-86.7%	324	3.2%
Human Resources	122	-	545	0.0%	571	4.8%
Office of the General Counsel	-	-	-	0.0%	-	0.0%
Water Recycling Program	4	-	4	0.0%	4	0.0%
Administration	-	-	-	0.0%	-	0.0%
<b>Total Departments</b>	<b>80,813</b>	<b>86,875</b>	<b>91,470</b>	<b>5.3%</b>	<b>93,660</b>	<b>2.4%</b>

The Water System capital labor budget is increasing approximately \$4.6 million in FY20 and \$2.2 million in FY21 to fund additional positions in support of capital work. The total labor increase in FY20 is offset by a slower than projected rise in benefits cost. In FY21, total capital labor will increase primarily due to scheduled salary step increases.

## Capital Program Highlights

All Water System FY20-24 appropriations are shown below by strategy and program, with select programs and projects discussed in more detail to provide a sense of the work that is projected to take place over the next ten years.

### EXTENSIONS & IMPROVEMENTS TO THE SYSTEM STRATEGY

This strategy furthers the District's objectives to improve the infrastructure to ensure reliable, high quality service, and update and enhance the District's system modeling capabilities. Work under this strategy focuses on making improvements to various components of pressure zones such as pipelines, reservoirs, pumping plants and WTPs to improve system reliability for existing customers, and to provide service to new customers. The FY20-24 program strategy appropriations are as follows:

Appropriations (\$ Thousands)						
Programs	FY20	FY21	FY22	FY23	FY24	Total
Mapping	1,877	1,871	1,941	2,014	2,089	9,792
OP/NET	1,083	1,017	1,902	1,968	1,801	7,771
Pressure Zone Improvements	68,056	90,573	61,166	23,159	28,418	271,372
Walnut Creek - San Ramon Valley In-Zone Improvements	0	0	0	0	0	0
Water Treatment and Transmission Improvements	6,467	3,439	21,988	174,946	1,900	208,740
<b>Total</b>	<b>77,483</b>	<b>96,900</b>	<b>86,997</b>	<b>202,087</b>	<b>34,208</b>	<b>497,675</b>

#### Pressure Zone Improvement Program

The Pressure Zone Improvements Program includes studying individual pressure zones and compiling the studies into the Distribution System Master Plan, and upgrading or replacing reservoirs, pumping plants and transmission systems to optimize storage capacity and improve water quality. The following significant pressure zone work is planned:

- Almond/Fire Trail in Castro Valley – construct a new regulator/rate control station (RCS) in FY20-22 and replace the 6.6 million gallon (MG) open-cut Almond Reservoir with two smaller tanks in FY26-30, and then demolish the 3.1 MG Cull Creek Reservoir;
- Encinal Cascade in Orinda – replace the Westside Pumping Plant (PP) and associated pipelines in FY20-23, and replace Dos Osos Reservoir with dual tanks at a higher elevation and rehabilitate the Dos Osos Pumping PP in FY22-26;
- Leland in Lafayette/Walnut Creek – replace the 18 MG open-cut reservoir and associated pipelines with two 8 MG concrete reservoirs in FY21-25;
- Maloney in El Sobrante/Pinole/Crockett – increase the capacity of the Maloney PP by 12.5 MGD in FY19-22, make improvements to the Crockett PP in FY23-27, and construct a new 3 to 5 MG Selby Reservoir in FY24-27;
- Summit in Berkeley – plan for a new Lawrence Reservoir in FY23 subject to discussions with the Lawrence Berkeley National Laboratory and the University of California;
- Bryant in Orinda and Walnut Creek – upsize the Castle Hill and Los Altos PP's in FY24-29;



- West of Hills Transmission Improvements – increase transmission capacity to the Wildcat Aqueduct, new pipeline will be constructed in Berkeley and El Cerrito in FY19-22; a new Fontaine PP and RCS in Oakland will be constructed in FY22-25; increase transmission capacity to the Sequoia Aqueduct to efficiently fill Central Reservoir, new pipeline will be constructed in Oakland in FY22-26; construction of a new 25 MGD Wildcat PP is scheduled for FY23-28; and increase transmission capacity to the South 30 Aqueduct, new pipeline will be constructed in Oakland in FY27-30.

### **Water Treatment and Transmission Improvements Program**

The Water Treatment and Transmission Improvements Program (WTTIP) calls for new and upgraded facilities to meet water demands in the Lafayette, Orinda, Moraga and western Walnut Creek area. The program includes a new 3.2 MGD Happy Valley PP in Orinda in FY20-21; replacing the Fay Hill PP in Moraga with a new 2.6 MGD PP in FY20-23; a new 2 MG Ardith Reservoir and 1.2 MGD Donald PP in Orinda in FY22-25; a new Tice PP in Walnut Creek in FY23-26 which will allow for rezoning of the Tice area of the Colorados Pressure Zone (PZ) into a new Tice PZ; and a new 3 MGD Withers PP in Lafayette in FY25-28.

The program also includes constructing an intertie and 14 MGD PP between the Contra Costa Water District and the District's Leland PZ to provide a backup treated water supply for the Walnut Creek WTP in FY22-26; constructing a 20 MGD PP at the Bayview PP site in Castro Valley along with two rate control stations to allow water to be pumped through the Southern Loop Pipeline in FY22-26, thus providing a backup treated water supply to the East of Hills; and constructing a Walnut Creek Aqueduct and 63 MGD PP in FY22-29 to deliver treated water from the Walnut Creek WTP to the Lafayette WTP, thus allowing the Lafayette WTP to be decommissioned.

## **FACILITIES, SERVICES & EQUIPMENT STRATEGY**

This strategy furthers the District's objectives to ensure the security of the water supply and the water system; to evaluate facilities and implement corrective maintenance programs; to implement changes in technology; and to maintain a safe, well equipped workplace. Work associated with this strategy includes making security improvements at various facilities, implementing new computer systems and replacing vehicles and equipment as needed. The FY20-24 program strategy appropriations are as follows:

<b>Appropriations (\$ Thousands)</b>						
<b>Programs</b>	<b>FY20</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>Total</b>
Area Service Center / Building	19,454	3,215	5,218	3,199	3,277	34,363
Communications	12,050	0	0	0	0	12,050
Security	906	511	1,668	2,124	2,530	7,739
Vehicle / Equipment	10,465	3,936	2,975	3,869	2,656	23,901
<b>Total</b>	<b>42,875</b>	<b>7,662</b>	<b>9,861</b>	<b>9,192</b>	<b>8,463</b>	<b>78,053</b>

### **Area Service Center / Building Program**

The Area Service Center/Building Program is comprised of various projects to upgrade District buildings. In FY20-24, the focus will be on the Oakland Administration Building. Work includes HVAC improvements to increase energy efficiency and decrease maintenance cost; overhauling the elevators; new roofing; replacing carpet; upgrading electrical equipment; and installing new security cameras.

Other work includes replacing the deteriorated Oakport warehouse roof and developing additional storage space; making various improvements at the Adeline Maintenance Center; upgrading facilities at Walnut Creek PP 1 & 2, Bixler Maintenance Center, and Stockton Center to comply with ADA requirements; completing the conversion of a property purchased in Walnut Creek into the new Fleet Maintenance East facility; and a potential property purchase to support construction and maintenance operations.

### **Communications Program**

The Communications Program is comprised of projects that replace and upgrade computer and communication systems. The Materials Management Information System (MMIS) used for purchasing and accounting purposes is over 25 years old and will be replaced along with the Pareto budget system and the Financial Information System (FIS) in FY19-22 as the systems share data and must be integrated. Various modules of the HRIS will be replaced in FY20-22. Replacement of various work management systems including general work orders, concrete orders and paving orders will take place in FY19-22.

### **Vehicles / Equipment Program**

The Vehicle Replacements Project is ongoing and involves the periodic replacement of vehicles and construction equipment as needed. In FY20-21, equipment will be purchased to outfit additional staff and decrease the reliance on fully manned and operated contracts. In FY20-22, improvements will be made to fueling facilities including the replacement of fuel dispensers at sixteen sites, and installing vapor recovery equipment for the above ground storage tanks.

## MAINTAINING INFRASTRUCTURE STRATEGY

This strategy furthers the District's objectives to improve, rehabilitate and replace aging infrastructure in a cost effective manner to ensure the sustainable delivery of reliable, high quality water service now and in the future. Work under this strategy focuses on pipeline projects to improve system reliability for existing customers and to provide service to new customers. The FY20-24 program strategy appropriations are as follows:

<b>Appropriations (\$ Thousands)</b>						
<b>Programs</b>	<b>FY20</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>Total</b>
Corrosion	5,624	3,109	5,792	7,566	7,850	29,941
Electrical Hazard Prevention	145	315	383	344	407	1,594
Pipelines / Appurtenances	41,043	27,921	26,419	26,631	26,749	148,763
Pipelines / Regulators	117,322	64,637	118,527	126,910	103,465	530,861
Polybutylene Lateral Replacement	24,844	16,116	16,052	14,124	13,385	84,521
Pumping Plant Rehabilitation	11,336	2,254	2,953	15,501	19,664	51,708
Reservoir Rehabilitation	49,791	16,535	19,519	22,380	14,443	122,668
<b>Total</b>	<b>250,105</b>	<b>130,887</b>	<b>189,645</b>	<b>213,456</b>	<b>185,963</b>	<b>970,056</b>

### Corrosion Program

This program maintains and extends the useful life of pipelines by improving corrosion control on aqueducts, large diameter pipelines, distribution water mains, and copper laterals.

### Pipelines / Appurtenances Program

This program maintains efficient pipeline operations by replacing appurtenances such as valves, hydrants and meters at the end of their useful life. The New Service Installations Project installs taps on the main, laterals, and meter sets for new customers. The need for new services is expected to increase as housing development continues to rise. In FY16-17, 450 new services were installed each year. In FY18, over 700 services were installed, and this rate is expected to continue in FY20 and beyond.

Water meters are routinely replaced at the end of their useful life, as are meters that are believed to be reading inaccurately. In FY18, an estimated 15,000 residential meters and 300 small commercial meters were replaced, and the number of annual replacements is expected to increase to over 20,000 starting in FY20.

To comply with measures associated with California Senate Bill 555, a new Water Loss Control project has been created to construct water treatment plant flow meter verification pipeline vaults, and install acoustic leak detection devices to improve the accuracy of the District's water audit and reduce water losses in the distribution system.

### Pipelines / Regulators Program

Pipelines/Regulators is an ongoing program to replace deteriorated pipelines and expand the distribution system. This is the District's largest capital program.

The Pipeline Infrastructure Renewals project replaces deteriorating water distribution pipelines. In FY18, pipeline replacements totaled 15 miles. In FY20-24, work includes replacing 17.5 miles in FY20, ramping up to 22.5 miles per year by FY23. An increase in production is expected as more efficient replacement processes and installation methods are implemented.

The Large Diameter Pipelines project replaces the large transmission pipes that form the backbone of the distribution system. In FY20-29, work will occur in phases to make improvements to the Summit Pressure Zone by installing 3.5 miles of 24-inch pipe to replace undersized pipes located mostly in Berkeley. Work also includes completing construction of MacArthur/Davenport in Oakland in FY20; D Street and East 15th Street in Oakland in FY20-23; and installing three new 24-inch Oakland/Alameda estuary crossing pipelines in FY19-26.

Pipeline System Extensions is an ongoing project to serve new customers. The workload is estimated from projections of development activity and recent trends in water service activity in the District's New Business Office. In FY18-19, roughly 8 miles per year were installed (1.5 miles by District forces and 6.5 miles by applicants). In FY20-24, system extensions are expected to continue at 8 miles per year.

#### **Polybutylene Lateral Replacement Program**

This program previously focused on the replacement of defective polybutylene service laterals, but has been restructured to encompass all types of laterals. Crews respond to 4 to 5 service lateral failures each day (emergency replacements). While the majority involve replacing defective polybutylene laterals, a significant percentage also involve corroding copper laterals. This project will also continue to identify and replace service laterals within areas that have suffered high failure rates at a rate of 400 per year.

#### **Pumping Plant Rehabilitation Program**

The Distribution Pumping Plant Infrastructure Rehabilitation Plan was updated in 2018 and identifies the highest priority pumping plants for rehabilitation, replacement, or demolition. In FY20-24, work is planned at 27 of the District's 130 distribution pumping plants, and includes power reliability improvements to protect against extended electrical outages.

#### **Reservoir Rehabilitation Program**

This program includes the rehabilitation, replacement and demolition of distribution reservoirs. The Reservoir Rehabilitation and Maintenance Project extends the service lives of the steel and reinforced concrete distribution tanks by replacing coating systems; repairing or replacing roofs; and performing structural upgrades to improve water quality and enhance worker safety. In FY20-24, three to four steel reservoirs per year will continue to be rehabilitated, and the reservoir roof safety program to improve reservoir roofs and ladders will be completed.

The Open-Cut Reservoir Rehabilitation project includes the rehabilitation and replacement of open-cut reservoirs. Plans for FY20-24 include completion of the San Pablo Clearwell replacement in Kensington with two 3.5 MG concrete tanks, and demolition of the Seneca Reservoir in Oakland. Planning for the eventual replacement of North Reservoir in Richmond is scheduled for FY25-27, and replacing Central Reservoir in Oakland is planned for FY24-30.

## REGULATORY COMPLIANCE STRATEGY

This strategy furthers the District's objectives to operate and maintain facilities to meet all air, land and water discharge requirements; implement preventative and corrective maintenance programs; and improve the infrastructure to ensure delivery of reliable, high quality service. The work under this strategy focuses on dam safety improvements and modifications to reservoir towers. The FY20-24 program strategy appropriations are as follows:

<b>Appropriations (\$ Thousands)</b>						
<b>Programs</b>	<b>FY20</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>Total</b>
Dam Safety	8,335	900	1,013	1,250	0	11,498
Penn Mine	0	0	0	0	85	85
Remediation	11,000	0	0	4,985	3,000	18,985
Trench Spoils	10,756	1,058	1,098	1,440	1,346	15,698
<b>Total</b>	<b>30,091</b>	<b>1,958</b>	<b>2,111</b>	<b>7,675</b>	<b>4,431</b>	<b>46,266</b>

### **Dam Safety Program**

This program upgrades dams, reservoir outlet towers, clearwells and spillways to meet flood and earthquake safety requirements. The Dam Seismic Upgrades Project includes safety evaluations and dam freeboard increases to improve seismic safety. Evaluations have been completed at all of the District's dams. The seismic upgrade at Chabot Dam in San Leandro was completed in FY18. Upgrades at Camanche Dam are dependent on Federal Energy Regulatory Commission (FERC) review and approval, and is planned to begin in FY22.

The Reservoir Tower Modifications Project encompasses the seismic retrofit of six reservoir towers. Retrofits to Chabot Tower were completed as part of the seismic upgrades made to Chabot Dam, and retrofits to the Upper San Leandro (USL) and San Pablo Towers were recently completed. Retrofit of the Briones Tower in Orinda and the Lafayette Reservoir Tower to resist earthquake loads will take place in FY20-23. A previous seismic evaluation of the Pardee Reservoir Tower found it to be safe, but identified leakage in Pardee Tunnel. The tunnel was inspected in FY18 and found to be in satisfactory condition. Dam, spillway and reservoir tunnels will continue to be inspected and evaluated, and any necessary repairs made.

### **Remediation Program**

The Upcountry Wastewater Improvement Project will upgrade the wastewater collection, treatment and disposal systems serving Pardee and Camanche facilities in FY20-25. Work includes replacing the sewer collection systems at the Camanche North Shore and South Shore Mobile Home Parks; the Camanche South Shore Cottages; and the Camanche South Shore Monument RV Park.

### **Trench Spoils Program**

Trench soils are generated from pipeline installations and repairs, and are temporarily stockpiled at three sites for reuse or disposal: Miller Road in Castro Valley, Briones in Orinda and Amador in San Ramon. The project includes site management in accordance with regulatory requirements, periodic removal of the trench soils, and evaluation of soils reduction and disposal alternatives. The project also includes evaluating and potentially purchasing a property for additional trench soils purposes as soils production is expected to increase as more miles of pipe are replaced under the Pipeline Rebuild Program.

## RESOURCE MANAGEMENT STRATEGY

This strategy furthers the District's objectives to manage the Mokelumne and East Bay watersheds to ensure a high quality water supply; protect natural resources; and provide public access and recreational opportunities compatible with water quality and natural resource protection. Work under this strategy focuses on making improvements to recreational facilities at Camanche, Pardee and East Bay Reservoirs, and updating habitat and watershed management plans. The programs included in this strategy are:

<b>Appropriations</b> (\$ Thousands)						
<b>Programs</b>	<b>FY20</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>Total</b>
Recreation Areas	0	0	0	0	0	0
Watershed Recreation	4,400	1,715	1,202	857	1,120	9,294
<b>Total</b>	<b>4,400</b>	<b>1,715</b>	<b>1,202</b>	<b>857</b>	<b>1,120</b>	<b>9,294</b>

### Recreation Areas Program

The Pardee and Camanche Recreation Area facilities require periodic replacements and upgrades to the roads, parking lots, fuel docks, launch ramps, docks, boat berths, stores, campgrounds, and bathroom and shower buildings.

In FY20, the piping and delivery equipment between the fuel tanks and floating fuel dock at Camanche North Shore, and the Pardee Recreation Area coffee shop and store will be replaced.

### Watershed Recreation Program

This program provides for protecting and enhancing the District's watershed lands including trails and recreation facilities in accordance with master plans and regulatory requirements.

In FY20-24, projects at the San Pablo and Lafayette Recreation Areas include picnic area, playground and restroom improvements; visitor center and cafe upgrades; marina and dock improvements; water and sewer system upgrades; repaving primary roadways; and replacing rental boats. Watershed projects include trail staging area upgrades; habitat and pond restoration; hazardous tree removal; replacement of old fire pumps and boundary fence; upgrades at the Orinda Watershed Headquarters; and replacing patrol boats.

In FY21-22, work at the Mokelumne Watershed Headquarters includes a new fuel station, a back-up generator, construction of a modular warehouse/shop building, and vehicle access and circulation improvements.

## WATER QUALITY STRATEGY

This strategy furthers the District's objectives to operate and maintain facilities to surpass federal and state drinking water regulations, and to make system improvements that meet or surpass regulatory requirements. Work under this strategy focuses on making improvements to WTPs to improve water quality. The FY20-24 program strategy appropriations are as follows:

<b>Appropriations (\$ Thousands)</b>						
<b>Programs</b>	<b>FY20</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>Total</b>
Water Quality Improvement	1,200	200	1,050	0	0	2,450
Water Treatment Upgrade	150,200	31,610	630	652	675	183,767
<b>Total</b>	<b>151,400</b>	<b>31,810</b>	<b>1,680</b>	<b>652</b>	<b>675</b>	<b>186,217</b>

### Water Treatment Upgrade Program

The Treatment Plant Upgrade Project addresses compliance with water quality regulations, and improves the operation and reliability of the five WTPs. In FY20-24, planned work includes:

Orinda WTP - install a filter air scour system, add an ultraviolet (UV) disinfection facility and chlorine contact basin to improve disinfection reliability, minimize disinfection by-products and improve chemical dosing.

Upper San Leandro WTP - install a 5th flocculation stage and replace the failing flocculation baffles; replace the cable-vac solids collection system in the sedimentation basins; rehabilitate the reclaim and solids handling systems; replace the clearwell roof and chlorine contact basin; and complete miscellaneous structural and mechanical improvements.

Sobrante WTP - replace the reclaim and solids clarifier systems; add a 5th flocculation stage and replace the failing flocculation basin walls; add a chlorine contact basin; repair/replace the leaking raw water isolation valves; and upgrade the controls systems.

Walnut Creek WTP - rehabilitate the old filters and design a new ozone pre-treatment system and solids removal system.

Lafayette WTP - upgrade the control system and make chemical system safety improvements.

Planned work in FY25-27 includes constructing the Walnut Creek WTP pre-treatment system to address taste and odor issues, and solids handling improvements to increase the amount of water that can be reclaimed from the sludge.

San Pablo WTP is only operated during Orinda WTP/Claremont Tunnel outages or to support drought operations. In support of the upcoming Orinda WTP shutdown to install chemical safety improvements, the San Pablo WTP control system will be upgraded and mechanical and structural issues resolved prior to operating the plant.



## WATER SUPPLY STRATEGY

This strategy furthers the District's objectives to ensure a reliable, high quality water supply for the future; preserve current entitlements and augment the District's water supply; and reduce the demand for potable water through conservation and recycling. The immediate focus of this strategy is on maintaining the raw water aqueducts and water recycling projects. The FY20-24 program strategy appropriations are as follows:

<b>Appropriations (\$ Thousands)</b>						
<b>Programs</b>	<b>FY20</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>Total</b>
Aqueduct	6,060	25,522	19,778	20,374	37,305	109,039
Supply Reservoirs	1,157	4,953	759	3,068	1,124	11,061
Water Conservation	1,524	1,886	1,957	2,030	2,106	9,503
Water Recycling	11,071	5,897	14,419	8,853	9,596	49,836
Water Supply Management	983	0	38,082	0	0	39,065
<b>Total</b>	<b>20,795</b>	<b>38,258</b>	<b>74,995</b>	<b>34,325</b>	<b>50,131</b>	<b>218,504</b>

### Aqueduct Program

This program evaluates and makes improvements to the raw water aqueduct system. Various portions of Mokelumne Aqueduct 1 will be recoated in FY20-22 to provide protection from the corrosive Delta environment.

The program also includes replacing the deteriorated cement lining in the Mokelumne Aqueducts that protects the steel pipeline from internal corrosion. FY20-22 work includes studying lining technologies; pilot testing lining materials; inspecting the interior of the entire Mokelumne Aqueduct 2 and above-ground section of Mokelumne Aqueduct 3; and constructing the raw water treatment improvements to minimize corrosion.

Design of the new lining will take place in FY22-24, with the relining of Mokelumne Aqueduct 2 expected to start in FY26 and continue for approximately six years, followed by the relining of Mokelumne Aqueduct 3.

The Raw Water Studies and Improvements Project evaluates and makes improvements to the raw water system, including the above-ground portions of the three Mokelumne Aqueducts across the Delta. In FY20-29, work includes continuing to repair Mokelumne Aqueduct 1 temperature anchors; completing the Mokelumne Aqueduct 3 foundation study; and completing repairs of the Mokelumne Aqueduct 3 base isolators.

In FY20-24, work also includes upgrading the Briones Center and the Moraga Raw Water PP. Beyond FY24, planned work includes making Pardee Tunnel access improvements; completing the Lafayette Aqueduct 1 relining; rehabilitating the Walnut Creek Raw Water PP 3; and making electrical, instrumentation and mechanical improvements at five wasteways.

A long-term strategy for protecting the raw water supply is to construct a tunnel across the Delta to protect the Mokelumne Aqueducts from flood damage and seismic events. In FY20-24, the planning and environmental studies for a Delta Tunnel are expected to be completed, with design of the tunnel starting in FY25.

**Water Conservation Program**

In 2016, the District adopted an updated Urban Water Management Plan that included water conservation programs to reduce potable water demand. Through FY18, customers have achieved substantial water savings based on their response to the recent drought and participation in District conservation incentives, water use and leak detection surveys, and education programs.

Going forward, conservation services will continue to move away from product rebates toward customer water use management services, including landscape water budgets, web and mobile self-service tools, and conservation research. Other areas of focus include water loss control programs and Advanced Metering Infrastructure (AMI).

**Water Recycling Program**

To help reduce potable water demand, the District has undertaken a variety of recycled water projects. The San Ramon Valley (SRV) Recycled Water Program is a joint program with the Dublin San Ramon Services District to supply recycled water to portions of San Ramon, Danville, Blackhawk and surrounding areas. Under this program, the pump station between San Ramon and Danville is expected to be completed in FY24, with distribution pipelines to be implemented and site retrofits completed in FY26. The Blackhawk West phase of the project is anticipated to be completed in FY29.

Upgrades to the North Richmond Water Recycling Plant (NRWRP) will maintain the facility and continue to meet the District's contractual obligations to the Chevron Richmond refinery. In FY20-24, work includes clarifier and thickener drive replacements, polymer improvements, potable water bypass, and other improvements.

**Water Supply Management Program**

As part of the Water Supply Management Program (WSMP 2040), water supply efforts are being pursued within or adjacent to the District's Mokelumne River facilities, including a potential partnership with San Joaquin County to develop a groundwater banking demonstration project.

Other projects include Bay Area Regional Reliability (BARR) partnerships with a variety of local agencies. During FY20-21, member agencies will embark upon projects and programs that were identified under the BARR Drought Contingency Plan, including development of a grant-funded Regional Water Market program. The District is also evaluating participation in the Los Vaqueros Reservoir Expansion Project.

## NON-PROGRAM SPECIFIC STRATEGY

This strategy furthers the District's objective to maintain a strong financial position to meet both short and long-term needs. The Contingency Program focuses on making funds available for unanticipated needs, and for projects that are seeking grants to pay for a substantial portion of the project's cost.

<b>Appropriations</b> (\$ Thousands)						
<b>Programs</b>	<b>FY20</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>Total</b>
Contingency	5,502	3,062	23,000	0	0	31,564
<b>Total</b>	<b>5,502</b>	<b>3,062</b>	<b>23,000</b>	<b>0</b>	<b>0</b>	<b>31,564</b>

### Contingency Program

Contingency provides funding for unanticipated needs that may arise before the next budget cycle, such as replacement or repairs to facilities and equipment as a result of failures or safety deficiencies, and new projects or the acceleration of planned projects requiring funding before the next budget cycle. Funds may also be set aside for projects where grants are being sought in the event that the grant application is successful as most grants require the District to fund the project and then apply for reimbursement of allowable costs.

In FY20, funds have been set aside for possible costs related to building two large scale photovoltaic (PV) projects up to 8 megawatts (MW) on District property, In FY20-21, funds have been set aside for possible costs related to the replacement of fleet and equipment for Aqueduct staff. In FY21-22, funds have been set aside for possible costs related to the development of additional office and warehouse space at the Oakport facility in Oakland.

## **Capital Appropriation Summary**

This section provides a summary of the five-year appropriation for the Water System projects listed in the CIP, sorted by strategy and program. When the CIP is presented to the Board of Directors, the Board approves the overall five-year plan, but adopts just the first two years of the plan. The remaining three years are for planning purposes only and are subject to revision.

### **Department Abbreviations**

The abbreviation for the Lead Department responsible for each capital project is as follows:

CUS	–	Customer and Community Services Department
ENG	–	Engineering Department
FIN	–	Finance Department
ISD	–	Information Systems Department
MCD	–	Maintenance & Construction Department
NRD	–	Natural Resources Department
OSD	–	Operations & Maintenance Support Department
WOD	–	Water Operations Department
WRD	–	Water Resources Department
WRP	–	Water Recycling Program

Capital Improvement Projects		Dept	Prior Approp	FY20-24 APPROPRIATIONS (IN 000's)					
				FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	5 YR TOTAL
EXTENSIONS AND IMPROVEMENTS									
Mapping									
CAD/CAM Mapping, Documentation	ENG	35,581	1,877	1,871	1,941	2,014	2,089	9,791	
Mapping Total		35,581	1,877	1,871	1,941	2,014	2,089	9,791	
OP/NET									
OP/NET System	MCD	31,378	1,083	1,017	1,902	1,968	1,801	7,771	
OP/NET Total		31,378	1,083	1,017	1,902	1,968	1,801	7,771	
Pressure Zone Improvements									
Almond/Fire Trail PZI	ENG	16,060	0	0	0	0	0	0	
Bryant PZ Improvement Projects	ENG	0	0	0	0	711	650	1,361	
Gent Oakland Hills Cascade PZI	ENG	30,125	872	0	12	597	3,223	4,704	
Colorados Pressure Zone Imprv	ENG	1,018	72	0	0	0	0	72	
Distribution System Upgrades	ENG	7,066	1,509	552	558	565	573	3,757	
Encinal Cascade PZI	ENG	8,507	17,034	0	0	0	0	17,034	
Enterprise Hyd W/Q & Op Modi	ENG	785	889	0	0	0	0	889	
Leland Pressure Zone Impr	ENG	8,121	0	0	49,733	0	0	49,733	
Maloney PZ Improvements	ENG	47,689	31,075	0	0	21,006	0	52,081	
Pressure Zone Planning Program	ENG	3,680	1,118	552	0	0	0	1,670	
So Oakland Hills Cascades PZI	ENG	2,829	70	0	0	0	0	70	
Summit Pressure Zone Improve	ENG	40,259	0	0	0	0	0	0	
USL Pressure Zone Impr	ENG	722	0	30	0	280	0	310	
Water Demand Projection Update	ENG	1,490	546	0	0	0	0	546	
West of Hills Master Plan	ENG	92,973	14,871	89,439	10,863	0	23,972	139,145	
Pressure Zone Improvements Total		261,325	68,056	90,573	61,166	23,159	28,418	271,372	
WC-SRV In Zone Improvements									
Diablo PZ Improvements	ENG	13,555	0	0	0	0	0	0	
WC-SRV In Zone Improvements Total		13,555	0	0	0	0	0	0	
Water Trmt and Trans Impr									
Tice Pumping Plant	ENG	889	0	0	19,179	0	0	19,179	
WTTIP Distribution Improvs	ENG	38,980	6,433	0	2,809	0	0	9,243	
WTTIP WTP Improvements	ENG	22,114	34	3,439	0	174,946	1,900	180,319	
Water Trmt and Trans Impr Total		61,983	6,467	3,439	21,989	174,946	1,900	208,741	
EXTENSIONS AND IMPROVEMENTS TOTAL		403,823	77,483	96,900	86,998	202,087	34,208	497,676	

Capital Improvement Projects			Prior	FY20-24 APPROPRIATIONS (IN 000's)					
Dept	Approp	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	5 YR TOTAL		
FACILITIES, SERVC AND EQUIP									
Area Service Center/Bldg Prog									
Adm Bldg Modifications	ENG	43,024	3,223	1,203	180	1,874	595	7,075	
Buildings Assessment & Improve	ENG	23,384	9,558	1,247	4,518	505	2,270	18,099	
East Area Service Center	ENG	9,440	543	0	0	0	0	543	
Minor Facility Improvements	MCD	5,700	6,130	765	520	820	412	8,647	
Area Service Center/Bldg Prog Total		81,548	19,454	3,215	5,218	3,199	3,277	34,363	
Communications									
Data & Telecom Infrastructure	ISD	3,603	0	0	0	0	0	0	
FIS / MMIS Replacement	ISD	8,959	7,500	0	0	0	0	7,500	
HRIS Replacement	ISD	7,200	1,500	0	0	0	0	1,500	
Work Mgmt Systems Replacement	ISD	1,700	3,050	0	0	0	0	3,050	
Communications Total		21,462	12,050	0	0	0	0	12,050	
Security									
VA Security System Imprmts	MCD	26,697	906	511	1,668	2,124	2,530	7,739	
Security Total		26,697	906	511	1,668	2,124	2,530	7,739	
Vehicle/Equipment									
Diesel Engine Retrofit	MCD	16,528	0	0	0	0	0	0	
Fueling Facility Upgrades	MCD	9,266	2,765	565	100	0	0	3,430	
Veh & Hvy Equip Additions, Wtr	MCD	23,842	2,700	0	0	0	0	2,700	
Vehicle Replacements	MCD	94,749	5,000	3,371	2,875	3,869	2,656	17,770	
Vehicle/Equipment Total		144,384	10,465	3,936	2,975	3,869	2,656	23,900	
FACILITIES, SERVC AND EQUIP TOTAL		274,091	42,875	7,662	9,861	9,192	8,463	78,053	
MAINTAINING INFRASTRUCTURE									
Corrosion									
Aqueduct Cathodic Protection	ENG	3,392	62	464	482	500	519	2,027	
Dist Sys Corrosion Protection	ENG	12,049	4,771	1,824	4,459	6,183	6,415	23,652	
Trans Main Cathodic Protection	ENG	3,434	791	821	851	883	916	4,262	
Corrosion Total		18,875	5,624	3,109	5,792	7,566	7,850	29,941	
Electrical Hazard Prevent Pgm									
Electrical Hazard Prevention	ENG	2,676	145	315	383	344	407	1,594	
Electrical Hazard Prevent Pgm Total		2,676	145	315	383	344	407	1,594	
Pipelines/Appurtenances									
Hydrants Installed by DF	ENG	22,967	3,397	1,754	1,767	1,781	1,794	10,493	
New Service Installations	ENG	200,237	23,327	19,014	19,014	19,014	19,014	99,384	
Meter Replacements	MCD	49,984	4,092	4,129	4,273	4,421	4,523	21,437	

Capital Improvement Projects	Dept	Prior Approp	FY20-24 APPROPRIATIONS (IN 000's)				
			FY 2020	FY 2021	FY 2022	FY 2023	5 YR TOTAL
Pipeline Appurtenances	MCD	15,777	1,238	1,275	1,313	1,350	6,526
Water Loss Control	OSD	0	8,989	1,749	52	65	10,923
<b>Pipelines/Appurtenances Total</b>		<b>288,965</b>	<b>41,043</b>	<b>27,922</b>	<b>26,419</b>	<b>26,631</b>	<b>148,763</b>
<b>Pipelines/Regulators</b>							
Large Diameter Pipelines	ENG	128,480	58,553	415	28,681	22,637	321
Pipeline Infrastruct Renewals	ENG	266,414	49,842	54,280	56,434	65,563	75,909
Pipeline Relocations	ENG	59,359	5,879	6,099	6,328	6,565	31,683
Pipeline System Extensions	ENG	62,634	0	0	7,333	12,672	33,121
Pipeline System Improvements	ENG	33,327	2,230	3,843	3,988	4,314	6,792
Rate Control Station Rehab	ENG	11,284	120	0	15,763	0	0
Regulator Rehabilitation	ENG	19,414	698	0	0	15,159	516
<b>Pipelines/Regulators Total</b>		<b>580,912</b>	<b>117,321</b>	<b>64,638</b>	<b>118,526</b>	<b>126,910</b>	<b>530,861</b>
<b>Polybutylene Lateral Replcmt</b>							
Service Lateral Replacements	ENG	207,731	24,844	16,116	16,052	14,124	13,385
<b>Polybutylene Lateral Replcmt Total</b>		<b>207,731</b>	<b>24,844</b>	<b>16,116</b>	<b>16,052</b>	<b>14,124</b>	<b>84,521</b>
<b>Pumping Plant Rehabilitation</b>							
Pumping Plant Rehabilitation	ENG	142,785	11,336	0	40	12,479	16,528
Small Capital Improvements	MCD	14,784	0	2,254	2,913	3,022	3,136
<b>Pumping Plant Rehabilitation Total</b>		<b>157,569</b>	<b>11,336</b>	<b>2,254</b>	<b>2,953</b>	<b>15,501</b>	<b>51,708</b>
<b>Reservoir Rehab Program</b>							
Open Cut Reservoir Rehab	ENG	93,648	10,635	0	0	5,202	0
Reservoir Rehab/Maintenance	ENG	144,721	38,376	16,010	18,794	16,948	14,293
Facility Paving Project	MCD	2,525	780	525	725	230	150
<b>Reservoir Rehab Program Total</b>		<b>240,894</b>	<b>49,791</b>	<b>16,535</b>	<b>19,519</b>	<b>22,380</b>	<b>14,443</b>
<b>MAINTAINING INFRASTRUCTURE TOTAL</b>		<b>1,497,622</b>	<b>250,104</b>	<b>130,889</b>	<b>189,644</b>	<b>213,456</b>	<b>970,057</b>
<b>NON-PROGRAM SPECIFIC</b>							
<b>Non-Program Specific</b>							
Contingency Project Water	FIN	44,650	5,502	3,062	23,000	0	0
<b>Non-Program Specific Total</b>		<b>44,650</b>	<b>5,502</b>	<b>3,062</b>	<b>23,000</b>	<b>0</b>	<b>31,564</b>
<b>NON-PROGRAM SPECIFIC TOTAL</b>		<b>44,650</b>	<b>5,502</b>	<b>3,062</b>	<b>23,000</b>	<b>0</b>	<b>31,564</b>
<b>REGULATORY COMPLIANCE</b>							
<b>Dam Safety</b>							
Dam Operational Upgrades	ENG	11,023	2,250	0	1,013	1,250	0
Dam Seismic Upgrades	ENG	39,041	1,915	0	0	0	0
Dam Surveillance Improvements	ENG	8,063	4,170	900	0	0	0



Capital Improvement Projects		Dept	Prior Approp	FY20-24 APPROPRIATIONS (IN 000's)					
				FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	5 YR TOTAL
	Reservoir Tower Modifications	ENG	33,882	0	0	0	0	0	0
	San Pablo Dam Seismic Mods	ENG	82,588	0	0	0	0	0	0
	Dam Safety Total		174,597	8,335	900	1,013	1,250	0	11,498
Penn Mine									
	Penn Mine Remediation	OSD	18,221	0	0	0	0	85	85
	Penn Mine Total		18,221	0	0	0	0	85	85
Remediation									
	Upcountry WW Trmt Imprvmnts	MCD	21,057	11,000	0	0	4,985	3,000	18,985
	Remediation Total		21,057	11,000	0	0	4,985	3,000	18,985
Trench Spoils									
	Trench Soils Storage Sites	ENG	33,408	10,756	1,058	1,098	1,440	1,346	15,698
	Trench Spoils Total		33,408	10,756	1,058	1,098	1,440	1,346	15,698
	REGULATORY COMPLIANCE TOTAL		247,284	30,091	1,958	2,111	7,675	4,431	46,266
RESOURCE MANAGEMENT									
Recreation Areas									
	Camanche Rec Area Upgrades	ENG	6,176	0	0	0	0	0	0
	Pardee/Cam Rec Areas Impr Plan	NRD	10,204	0	0	0	0	0	0
	Recreation Areas Total		16,380	0	0	0	0	0	0
Watershed Recreation									
	East Bay Watershed Rec Projs	NRD	13,183	1,250	240	527	412	855	3,284
	F&W Projects and Mok Hatchery	NRD	4,211	325	1,275	475	295	115	2,485
	Mokelumne Watershed Rec HQ	NRD	4,160	2,600	0	0	0	0	2,600
	Mokelumne Watershed Rec Projs	NRD	5,841	225	200	200	150	150	925
	Watershed Recreation Total		27,395	4,400	1,715	1,202	857	1,120	9,294
	RESOURCE MANAGEMENT TOTAL		43,775	4,400	1,715	1,202	857	1,120	9,294
WATER QUALITY									
Water Quality Improvement									
	Distrib Sys Wtr Quality Imprv	WOD	21,120	1,200	200	1,050	0	0	2,450
	Water Quality Improvement Total		21,120	1,200	200	1,050	0	0	2,450
Water Treatment Upgrade									
	Treatment Plant Upgrades	ENG	256,211	150,200	31,000	0	0	0	181,200
	Minor WTP Capital Work	WOD	4,542	0	610	630	652	675	2,567
	Water Treatment Upgrade Total		260,753	150,200	31,610	630	652	675	183,767
	WATER QUALITY TOTAL		281,873	151,400	31,810	1,680	652	675	186,217

Capital Improvement Projects			Dept	Prior Approp	FY20-24 APPROPRIATIONS (IN 000's)					
					FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	5 YR TOTAL
WATER SUPPLY										
Aqueduct Program										
		ENG	30,560	4,350	12,650	3,520	0	0	20,520	
	Mok Aqu No 2 & 3 Relining Proj	ENG	43,315	1,710	0	0	0	0	1,710	
	Mokelumne Aqueduct Recoating	ENG	76,416	0	12,272	15,286	18,054	36,310	81,922	
	Raw Water Studies and Improves									
	Raw Wtr Aq O&M Imprvmnts	WOD	48,368	0	600	972	2,320	995	4,887	
	Aqueduct Program Total		198,659	6,060	25,522	19,778	20,374	37,305	109,039	
Supply Reservoirs										
	Camanche WTP Improvement	WOD	7,519	0	0	0	0	0	0	
	Enhanced Power Revenue	WOD	11,378	20	20	20	1,520	20	1,600	
	Pardee Ctr Cap Maint & Imprvmt	WOD	1,845	321	203	227	316	271	1,338	
	Powerhouse Improvements	WOD	9,673	250	4,428	26	937	381	6,022	
	Rec Area Cap Maint & Imprvmt	WOD	3,546	450	194	366	207	349	1,565	
	Wtr Supply Monitoring System	WOD	1,857	116	108	120	88	103	535	
	Supply Reservoirs Total		35,817	1,157	4,953	758	3,068	1,123	11,060	
Water Conservation										
	Water Conservation Project	CUS	71,349	1,524	1,886	1,957	2,030	2,106	9,503	
	Water Conservation Total		71,349	1,524	1,886	1,957	2,030	2,106	9,503	
Water Recycling										
	East Bayshore	WRD	60,075	9,674	4,004	5,516	7,246	362	26,803	
	RARE Water Project	WRD	64,802	0	135	431	447	465	1,478	
	SRV Recycled Water Program	WRD	88,392	0	0	5,040	0	416	5,456	
	Water Recycling W&SMP	WRD	16,998	540	50	2,955	415	6,059	10,019	
	No Richmond Recy Wtr Fac Impr	WRP	15,059	857	1,708	477	745	2,294	6,081	
	Water Recycling Total		245,327	11,071	5,897	14,418	8,853	9,597	49,836	
Water Supply Mgmt Program										
	Addl Supplemental Supply Projs	WRD	110,985	0	0	36,500	0	0	36,500	
	Bayside Groundwater Project	WRD	28,453	983	0	1,582	0	0	2,565	
	Water Supply Mgmt Program Total		139,438	983	0	38,082	0	0	39,065	
	WATER SUPPLY TOTAL		690,589	20,795	38,258	74,993	34,325	50,131	218,503	

APPROPRIATIONS SUMMARY (IN 000'S)					
Prior	FY 2020	FY 2021	FY 2022	FY 2023	5 YR TOTAL
3,483,708	582,650	312,253	389,489	468,244	2,037,629

## **Operating Budget Impact of Capital Investments**

The FY20-24 CIP includes various significant nonrecurring capital projects that will affect the operating budget and the services that the District provides. Such projects and their potential impacts include:

### **Administration Building HVAC Upgrades**

The upgrades replace aging equipment and increase energy efficiency. Improvements to the Data Center include installation of an automatic transfer switch for emergency power during outages. Energy efficiency upgrades include lighting, window, solar gain reductions, HVAC controls, and replacing the aging central plant equipment (boilers, chillers, cooling towers) to reach an Energy Star rating of 75 or better.

This project is estimated to save \$0.2 million per year in energy cost and \$0.2 million per year in maintenance cost. It is also expected to reduce greenhouse gas emissions by roughly 700 metric tons of carbon dioxide equivalent per year.

### **Briones / Lafayette Tower Modifications**

The Briones Tower requires upgrades to safely resist seismic loads. Design of the upgrades started in FY16, and will be followed by construction. The project also includes Lafayette Reservoir Tower modifications which include seismic and gate control upgrades, and modification of the tower to act as a spillway capable of handling the revised Probable Maximum Flood. Both retrofit projects are required by the California Division of Safety of Dams.

These tower modifications will not result in any significant costs or revenues, but will increase public safety in the event of an earthquake.

### **Financial / Materials Management Information System**

This project will replace the 25-year old MMIS that is supported by a one person consulting firm with a new procurement and vendor management system. The PeopleSoft FIS is over 20 years old and no longer meets business needs. Accounts payable functionality is handled in MMIS so its replacement has been included with the FIS replacement to ensure such functionality is addressed. In addition, a new budget system will be implemented.

A new purchasing, accounting, inventory and budget system will reduce the risk of system failure, reduce vendor dependence, and greatly improve system integration. Replacement of these systems requires funding additional new positions on a limited-term basis (two to three years) to implement the new systems and conduct extensive testing and training.

### **Human Resource Information System**

This project will replace the 20-year old PeopleSoft HRIS. Three key functional areas will be addressed: employee data, retirement and payroll. The District will use a best of breed strategy to ensure the appropriate solution will be selected to best meet the business needs now and into the future. Replacement of this system requires funding temporary construction positions to assess needs, select a solution, implement the new solution and conduct extensive testing.

### **Happy Valley/Sunnyside Pumping Plants**

Work includes a new 3.2 MGD Happy Valley PP in Orinda, and 3,300 feet of 16-inch pipeline. The Las Aromas Pressure Zone (PZ) has a deficit of 2.9 MGD in pumping capacity. This project will resolve the deficiency and can be expanded to 4.2 MGD to meet future demands. The project also includes a new 1.5 MGD Sunnyside PP in Lafayette to resolve an existing 0.7 MGD pumping capacity deficit and improve hydraulic connectivity in the Valley View PZ.

Annual maintenance costs are estimated to be \$0.04 million for Happy Valley PP and \$0.03 million for Sunnyside PP. Annual electricity costs are estimated to be \$0.05 million for each PP.

### **Maloney Pumping Plant & Sobrante Water Treatment Plant Improvements**

Pumping capacity in the Maloney Pressure Zone is inefficient. The project will increase pumping capacity from 30 to 45 MGD with standard electric pumps, allowing pumping to be done during off-peak times when energy costs are lower. Electrical improvements at Sobrante WTP are needed to address reliability issues at this critical treatment facility.

Overall operating and maintenance costs for these facilities are expected to decrease. While costs for increased pumping may rise in the future, maintenance costs will decrease significantly as the diesel driven pump, which historically required a high level of effort to maintain, will be removed from service.

### **Raw Water Treatment Facilities Improvement**

The Pardee Chemical Improvements Project and the Inline Water Treatment Plant (WTP) Carbon Dioxide (CO<sub>2</sub>) Injection System Improvements Project include the addition of treatment facilities to improve water chemistry to protect aqueduct lining materials.

The Pardee Chemical Improvements Project includes installation of a new lime storage and slaker facility; a new CO<sub>2</sub> storage, dissolution and injection system; a new operations and maintenance building; and development of chemical injection alternatives into the Pardee Tunnel at the Pardee Center Chemical Plant.

The Inline WTP CO<sub>2</sub> Injection System Improvements Project includes installation of a CO<sub>2</sub> system on the aqueducts at Walnut Creek, as well as at the three in-line WTPs (Lafayette, Orinda, and Walnut Creek).

These projects are anticipated to have a significant increase in upcountry operations, maintenance and utility costs, but minimal increase at the inline WTPs. Also, water chemistry will be improved to protect aqueduct lining materials.

### **San Pablo Clearwell Replacement**

San Pablo Clearwell, a 5.4 MG open-cut reservoir located in Kensington, will be demolished and replaced with two 3.5 MG concrete reservoirs, along with replacement of the rate control station, pipelines, and chlorine contact baffles. The pre-cast concrete roof of the San Pablo Reservoir is structurally unsafe and has roof access restrictions. Also, the lining, outlet tower structure, valves, and extension stems require replacement.

Operational costs are anticipated to decrease incrementally as the new facilities will improve access for maintenance activities and require less emergency maintenance.

### **Seneca Reservoir Demolition**

Seneca Reservoir, a 30 MG open-cut reservoir located in Oakland, will be demolished and the property offered for sale. The District expects to receive approximately \$3.7 million from the sale of the property.

### **Sobrante / Upper San Leandro / Walnut Creek Water Treatment Plants**

Sobrante WTP projects include the replacement of the reclaim and solids clarifier systems. In addition, a mixing/oxygenation system will be installed at San Pablo Reservoir to reduce manganese and address taste and odor water quality issues.

Improvements to the USL WTP include replacement of the unreliable cable-vac solids collection system; rehabilitation of the reclaim and solids handling systems; installation of a filter-to-waste basin; replacement of the seismically deficient clearwell roof; rehabilitation of Filter 15 and capping of media on all filters; and installation of a 5th flocculation stage and replacement of the failing flocculation baffles.

Walnut Creek WTP projects will increase the robustness of the treatment train by installing a pretreatment system and rehabilitating Filters 1 through 4 with a modern underdrain system and updating the filter controls. The pretreatment system includes both a solids removal process and a system to address taste and odor issues for 80 MGD of WTP capacity. In addition, new solids handling improvements will be made to better thicken the sludge and reduce the number of truck loads required.

Changes to the operating costs at USL and Sobrante WTPs are uncertain. The volume and thus the cost of sewer waste discharge will be reduced, but the overall operating and maintenance impact has yet to be determined as the system has not been designed. The operating costs for the Walnut Creek WTP are expected to increase with the addition of pretreatment, as this is an added treatment process that will require energy and additional chemicals, but will improve water quality.

### **Sobrante and USL Water Treatment Plants Ozone**

The existing ozone systems at Sobrante and USL WTPs use air to generate ozone with high operation and maintenance costs due to unreliable and obsolete ozone generators. The new ozone equipment will use oxygen to generate ozone and are much more reliable and energy efficient than the existing systems. Moreover, the new system will have a greater capacity to generate ozone to remove higher concentrations of taste and odor causing compounds that have been observed in the Sobrante and USL WTPs raw water in the past several years.

The total annual operational cost savings for the new ozone systems at these plants is estimated to be \$0.2 million, and the total annual maintenance cost savings is estimated to be \$0.5 million. Also, taste and odor issues will be reduced.

### **South Reservoir Replacement**

South Reservoir, a 50 MG open-cut reservoir located in Castro Valley, was demolished and is being replaced with a new 9 MG concrete reservoir. The reservoir is being replaced due to water quality concerns, and pre-cast concrete roof panels that were structurally damaged.

Operational costs are expected to decrease slightly from when the 50 MG reservoir was in service. The new, smaller facility is anticipated to reduce the need for frequent reservoir treatments for water quality, and roof maintenance activities.

### **Summit Reservoir Replacement**

The project replaces the 37 MG open-cut reservoir with a 3.5 MG concrete tank, a new flow control valve, and replacement of Woods and Shasta Pumping Plants at the same site. Construction was completed in FY19.

The smaller, appropriately sized reservoir will improve turnover and thus water quality, which will reduce or eliminate the need to manually chlorinate some reservoirs in the Berkeley hills. The project will also replace two aging pumping plants with new pumping plants, which will increase reliability and reduce the need for maintenance. The new landscape plan includes a larger landscaped area, removal of existing trees, and planting additional trees and shrubs, which may affect landscaping maintenance.

### **Transmission Main Corrosion Protection**

This project will prioritize cathodic protection upgrades for transmission mains and large diameter pipelines, and reconfigure existing, but obsolete cathodic protection systems. Transmission mains and large diameter pipelines constitute the District's costliest pipelines. Many cathodic protection systems have reached the end of their useful life and need rehabilitation to continue to control pipeline corrosion and prevent leaks and breaks.

In FY20-24, the USL Raw Water Pipeline's and South 30 Aqueduct's cathodic protection systems will be replaced, and replacement of galvanic anodes on a District-wide basis will commence on plastic-coated steel transmission mains.

This project will decrease the likelihood of main breaks on steel pipelines by providing and maintaining cathodic protection. It is difficult to estimate the amount of savings, but the number of main breaks on steel pipelines will decrease, which will free maintenance staff from performing repairs on steel pipelines.

In addition, this project will introduce remote cathodic protection monitoring units into the transmission main system, which will save time for Corrosion Control staff. Remote monitoring units have the ability to take real-time measurements that can be reviewed online using satellite or cellular communication.

### **Upper San Leandro and Sobrante WTP Control System Upgrades**

This project will replace the antiquated WTP controls systems with modern systems at the USL and Sobrante WTPs to resolve reliability/maintainability issues. Improvements will include the addition of local indication and controls to support manual operation, as well as Phase II upgrades at both Sobrante and USL WTPs.

The project is anticipated to decrease the operational and maintenance costs associated with fixing the antiquated Moore controllers.

## **FIVE-YEAR FINANCIAL FORECAST**

### **SUMMARY**

The five-year financial forecast presents the estimated impact of operations, debt service requirements and reserve balances on rate projections over the five-year period.

This forecast is built upon:

- Adopted District financial policies
- Capital investments in the FY20-FY24 CIP

This forecast identifies a series of rate increases for the Water System based on estimated increases in operating and capital expenditures to maintain service levels, meet mandated program requirements, and pay increased debt service to fund capital expenditures.

On average over the five-year period, revenues are forecast to increase 5.4 percent per year to cover the increases in operating and capital expenses, and maintain a minimum of 1.6 times coverage on revenue bond debt service. Forecasted operating expenses are expected to grow by 4.4 percent per year over the five-year period, while debt service grows 5.2 percent per year.

The key factors driving the need for increased Water System revenues are:

- Increasing labor and benefit costs
- Inflation on non-labor products and services
- Impact of lower customer water demand and revenue
- Increasing capital program costs

For all five years, the cash reserves exceed the cash reserve targets. Reserves in excess of those needed to meet financial reserve targets are available to pay for a significant portion of the capital program expenses with cash, a positive financial metric.

Capital cash flow spending, including the administration of capital, is projected at \$1.9 billion over the five-year period. Major programs to be undertaken during this period include Pipelines, Regulators and Appurtenances programs; Water Treatment Plant Upgrades; Raw Water Aqueduct Improvements; Pressure Zone Improvements; and Reservoir Rehabilitation.

The projected average percentage of capital funded from debt will be 49.4 percent over the five-year period significantly lower than the financial policy target maximum of 65 percent. In FY20 and FY21, the debt coverage ratio is projected at 1.88 and 1.89, respectively, and for all five years the ratio exceeds the target coverage ratio of 1.60.



## OPERATIONS

The following table shows the financial forecast for the Water System operating budget based on projected operations and maintenance expenses and debt service requirements.

<b>Water System Operating Budget</b> <b>Five-Year Financial Forecast (\$ Millions)</b>							
	<b>FY18</b> <b>Actuals</b>	<b>FY19</b> <b>Budget</b>	<b>Forecast</b>				
			<b>FY20</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>
<b>Beginning Balance</b>	-	-	<b>332.8</b>	<b>383.2</b>	<b>357.0</b>	<b>396.5</b>	<b>411.8</b>
Water Charges	480.8	507.5	543.5	582.5	617.3	653.7	692.3
Property Taxes	34.7	30.7	35.0	35.8	36.7	37.6	38.5
Power Sales	7.0	3.7	5.0	5.0	5.0	5.0	5.0
Interest Income	7.5	7.4	9.3	9.6	9.8	10.5	11.1
SCC Revenue	69.3	28.0	40.0	40.0	40.0	40.0	40.0
Reimbursements	11.7	11.9	12.3	12.6	13.0	13.4	13.8
All Other Revenue	<u>19.8</u>	<u>18.1</u>	<u>18.2</u>	<u>18.4</u>	<u>18.6</u>	<u>18.8</u>	<u>19.0</u>
<b>Total Operating Revenues</b>	<b>630.7</b>	<b>607.2</b>	<b>663.2</b>	<b>703.9</b>	<b>740.4</b>	<b>778.9</b>	<b>819.6</b>
Revenue Funded Capital	115.3	101.1	105.4	197.0	140.8	178.4	175.1
Operations	251.0	292.5	299.3	315.4	328.3	341.9	356.0
Debt Service	<u>183.8</u>	<u>210.0</u>	<u>208.2</u>	<u>217.7</u>	<u>231.8</u>	<u>243.4</u>	<u>255.0</u>
<b>Total Expenses</b>	<b>550.1</b>	<b>603.6</b>	<b>612.9</b>	<b>730.1</b>	<b>700.9</b>	<b>763.7</b>	<b>786.1</b>
<b>Ending Balance</b>	-	-	<b>383.2</b>	<b>357.0</b>	<b>396.5</b>	<b>411.8</b>	<b>445.3</b>
Policy Reserves	-	-	182.2	191.2	204.5	217.9	231.4

The following table shows the key assumptions used to create the revenue forecast.

<b>Water System Key Assumptions</b> <b>Five-Year Financial Forecast</b>							
	<b>FY18</b> <b>Actuals</b>	<b>FY19</b> <b>Budget</b>	<b>Forecast</b>				
			<b>FY20</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>
Water Sales Volume (mgd)	144.5	141	141	143	144	146	147
% Rate Increase	9.25%	9.00%	6.50%	6.25%	5.00%	5.00%	5.00%
Average monthly single family residential bill based on 8 ccf/month	\$51.49	\$56.12	\$59.74	\$63.47	\$66.64	\$69.98	\$73.47
Debt Service Coverage Ratio	2.15	1.60	1.88	1.89	1.85	1.87	1.89

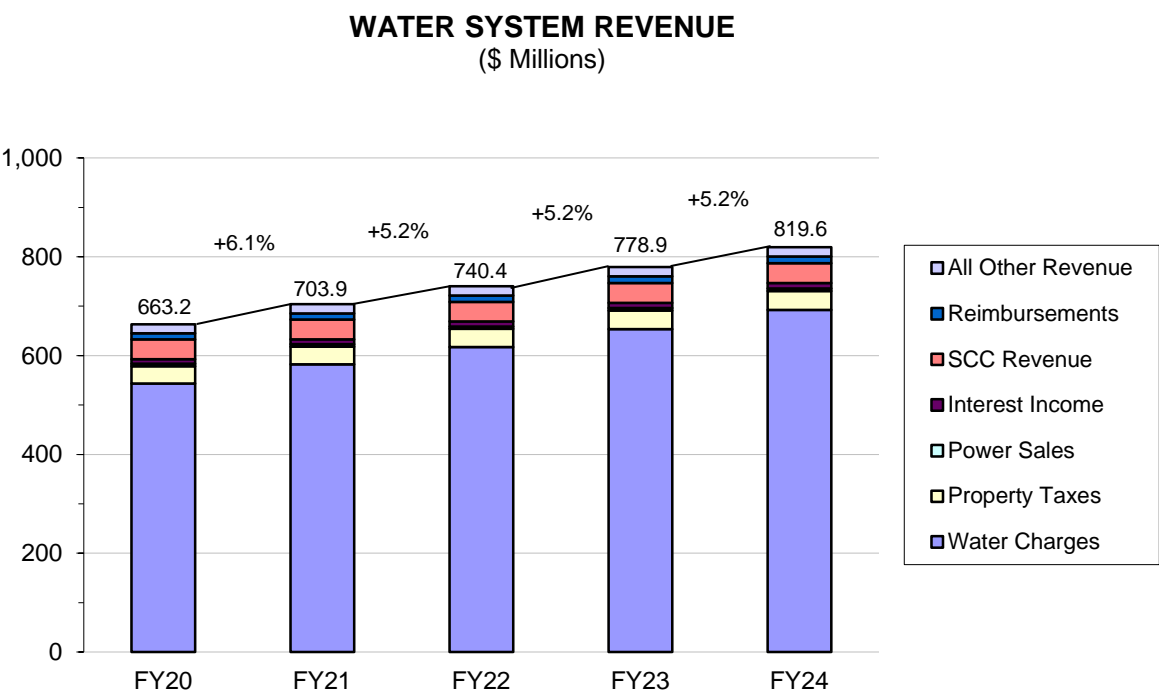
# Five-Year Projection of Revenue

The key factors driving the need for increased Water System revenues are: increasing labor and benefit costs, inflation on non-labor products and services, the impact of the lower customer water use, and an increase in funding the capital program from revenue rather than debt. Water System revenues will be used to pay for an increasing amount of capital expenditures on a pay-as-you-go basis.

Projected annual operating revenues are expected to increase from \$663.2 million in FY20 to \$819.6 million by FY24, an increase of \$156.4 million or 5.4 percent per year. The increase in revenue over the five-year period is to cover increased costs in operations and maintenance, debt service requirements, and revenue funding for capital projects.

The major components of the increases in operating revenue over the five-year period are revenue from Water Charges which is projected to increase from \$543.5 million in FY20 to \$692.3 million in FY24 based on water rate increases; interest rate increases as they recover from historic lows; and increased property tax revenue.

The following chart shows projected Water System operating revenue by category for the next five years.



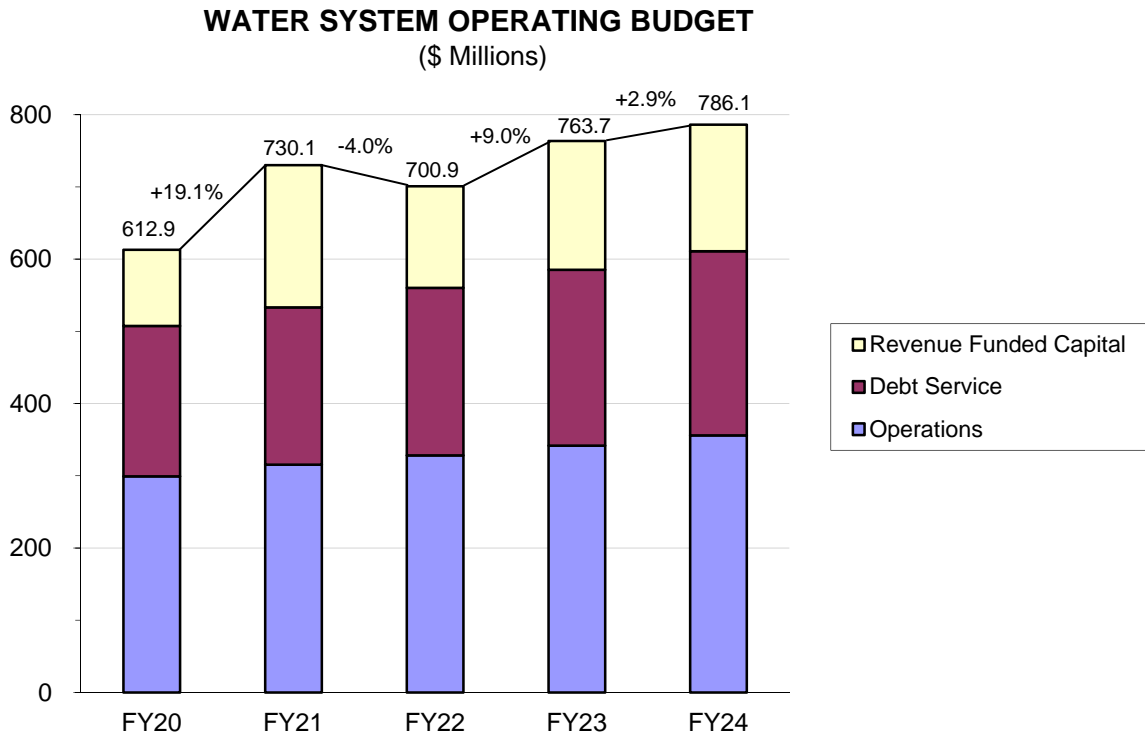
## Five-Year Projection of Operating Budget

The Water System operations expenses are projected to increase from \$299.3 million in FY20 to \$356.0 million in FY24, an increase of 4.4 percent per year.

Debt service requirements are expected to increase from \$208.2 million in FY20 to \$255.0 million by FY24, an increase of 5.2 percent per year. The five-year increase results in \$956.5 million of new debt that will be issued to finance the Water System CIP.

The District uses rate revenue to cash fund a portion of its annual CIP expenses. The amount of revenue funded capital increases over the five-year period from \$105.4 million in FY20 to \$175.1 million in FY24, an increase of 66.1 percent. In FY22, the decrease in the operating budget is the result of less revenue funding of the capital program and use more bond proceeds in that year.

This chart summarizes projected Water System budget by category for the next five years.



## Five-Year Projection of Reserves

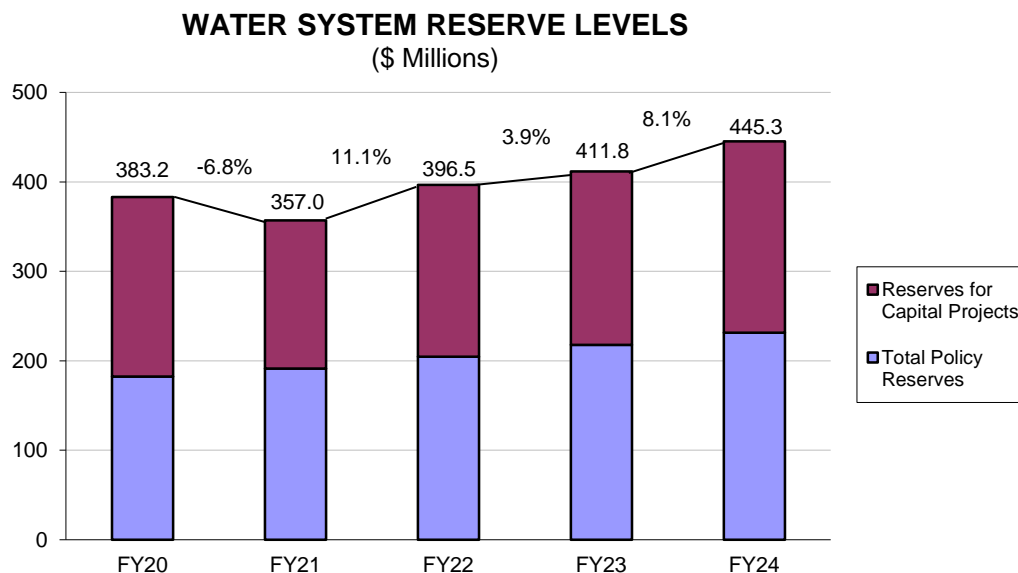
The operating reserves consist of:

- Working capital reserves equal to three months operating and maintenance expenses
- Self-Insured Liability reserve based on the actuarial Self-Insured Retention (SIR) funding recommendation
- Workers' Compensation reserve based on the actuarial SIR funding recommendation
- Rate stabilization reserve of a minimum of 20 percent of projected annual water volume revenues

The table below shows the changes to reserve components over the five-year period. Reserve balances meet or exceed the policy reserve levels for the entire period.

<b>Water System Reserve Components</b> (\$ Millions)					
	<b>Forecast</b>				
	<b>FY20</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>
<b>Projected Operating Budget Reserves</b>	<b>383.2</b>	<b>357.0</b>	<b>396.5</b>	<b>411.8</b>	<b>445.3</b>
<b>Policy Reserves</b>					
Working Capital	74.8	78.8	82.1	85.5	89.0
Self-Insured Liability Reserve	7.0	7.0	7.0	7.0	7.0
Workers' Compensation Reserves	5.4	5.4	5.4	5.4	5.4
Rate Stabilization Reserve	95.0	100.0	110.0	120.0	130.0
<b>Total Policy Reserves</b>	<b>182.2</b>	<b>191.2</b>	<b>204.5</b>	<b>217.9</b>	<b>231.4</b>
<b>Reserves Available for Capital Projects</b>	<b>201.0</b>	<b>165.7</b>	<b>192.0</b>	<b>193.9</b>	<b>213.9</b>

The following chart shows Water System reserve levels projected at the end of each fiscal year.



## **CAPITAL INVESTMENTS AND FINANCING**

The Five-Year CIP outlines Water System capital investment plans, the estimated cost of these investments, and the sources of funds. Appropriations reflect the amount that is authorized and budgeted over a multi-year period for each program. Cash flows are the amounts estimated to be spent on each program in a given year. The five-year program for the Water System includes \$2.2 billion in capital project appropriations, including administration of capital expenses, and \$1.9 billion in projected cash flow spending.

The focus of the CIP is the five-year period from FY20-24. Capital needs have been estimated for a second five-year period from FY25-29, but given the long-term nature of these capital improvement plans, by necessity they are preliminary estimates only and will be revised as studies are completed, priorities are redefined, and as new needs emerge. Therefore, the budget focuses on the first five years of the CIP.

Funding for the CIP is drawn from the proceeds of revenue bond issues, commercial paper, grants, reimbursements from developers and other agencies, and current reserves and revenues.

For the FY20-24 CIP, an increasing amount of capital expenditures will be funded on a pay-as-you-go basis in accordance with the District's financial policies. Over the five-year period, the percentage of capital funded from debt will average 49.4 percent, under the target maximum of 65 percent contained in the District's debt policy, and debt service will grow by 5.2 percent per year. Water System total outstanding debt will increase \$422.2 million during the period. Total debt outstanding at the end of the five-year period will total \$2.9 billion.

In FY20 and FY21, the debt coverage ratio is projected at 1.88 and 1.89, respectively, and for all five years the ratio exceeds the target coverage ratio of 1.60.

The following table shows the cash flow spending on capital improvements anticipated for the next five years, along with the financial resources anticipated to fund the capital program.

<b>Water System Capital Budget Five-Year Financial Forecast (\$ Millions)</b>						
	FY20	FY21	FY22	FY23	FY24	Total
<b>Beginning Balance</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>-</b>
<b>Resources</b>						
Revenue Funded Capital	105.4	197.0	140.8	178.4	175.1	796.7
New Bond Proceeds	200.4	156.8	228.3	172.5	179.3	937.4
Loans Proceeds	-	-	-	-	-	-
Grants	-	-	-	-	-	-
Reimbursements	32.0	31.7	30.6	34.2	33.4	161.8
Commercial Paper	-	-	-	-	-	-
<b>Total Resources</b>	<b>337.7</b>	<b>385.5</b>	<b>399.7</b>	<b>385.1</b>	<b>387.8</b>	<b>1,895.9</b>
<b>Expenditures</b>						
Capital Cash Flow	297.7	345.5	358.4	342.5	343.8	1,687.9
Administration of Capital	40.0	40.0	41.3	42.6	44.0	208.0
<b>Total Expenditures</b>	<b>337.7</b>	<b>385.5</b>	<b>399.7</b>	<b>385.1</b>	<b>387.8</b>	<b>1,895.9</b>
<b>Ending Balance</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>-</b>
<b>Debt Percentage of Funding</b>	<b>59.3%</b>	<b>40.7%</b>	<b>57.1%</b>	<b>44.8%</b>	<b>46.2%</b>	<b>49.4%</b>

Projected new bond issues, outstanding debt, and debt service are shown in the following table.

<b>Outstanding Debt and Debt Service at End of Fiscal Year (\$ Millions)</b>					
	FY20	FY21	FY22	FY23	FY24
Beginning of Year Outstanding Debt	2,347.3	2,483.8	2,571.2	2,725.0	2,815.3
Debt Retired	68.1	72.6	79.2	85.7	92.3
New Bond Issues and Commercial Paper	204.5	160.0	233.0	176.0	183.0
<b>Total Outstanding Debt</b>	<b>2,483.8</b>	<b>2,571.2</b>	<b>2,725.0</b>	<b>2,815.3</b>	<b>2,906.0</b>
Debt Service, Existing Debt	190.0	189.0	188.7	188.8	188.5
Debt Service, New Debt	13.3	23.7	38.9	50.3	62.2
Debt Servicing Costs	4.9	5.0	4.2	4.3	4.3
<b>Total Debt Service</b>	<b>208.2</b>	<b>217.7</b>	<b>231.8</b>	<b>243.4</b>	<b>255.0</b>

## CHAPTER 4: WASTEWATER SYSTEM

This chapter provides a detailed description of the Wastewater System including discussions of the following topics:

- Fund Summary
- Sources of Funds
- Use of Funds
- Staffed Department Operations
- Debt Service and Financing
- Capital Improvement Program
- Five-Year Financial Forecast



*Digester*

The Wastewater System Fund is an enterprise fund consisting of an operating and a capital budget. The function of the Wastewater System is the treatment of wastewater from residences and industries in the communities of Alameda, Albany, Berkeley, Emeryville, Oakland, Piedmont, and the Stege Sanitary District. The Wastewater System receives administrative, financial, and other support services from the Water System.

The following are key projections and assumptions utilized in the FY20 and FY21 budget.

<b>Wastewater System Fund – Key Assumptions</b>		
	<b>FY20</b>	<b>FY21</b>
% Rate Increase	4.0%	4.0%
Average monthly single family residential bill based on 6 ccf/month	\$22.15	\$23.02



*Main Wastewater Treatment Plant*



## FUND SUMMARY

The fund summary illustrates the beginning and ending fund balances as well as revenues, expenditures, and other financing sources/uses. The following table shows the fund balance, and projected revenues and expenditures for the Wastewater System for FY20 and FY21.

<b>Wastewater System Fund Summary</b> <b>Operating and Capital Budgets (\$ Millions)</b>						
	FY20			FY21		
	Operating	Capital	Balance	Operating	Capital	Balance
<b>Beginning Balance (Projected)</b>	<b>103.0</b>	<b>0.0</b>	<b>103.0</b>	<b>89.4</b>	<b>0.0</b>	<b>89.4</b>
<b>Sources of Funds</b>						
<b>Operating Revenues</b>						
Treatment Charges	77.8		77.8	80.9		80.9
Resource Recovery	10.0		10.0	10.0		10.0
Wet Weather Facilities Charge	27.5		27.5	28.5		28.5
Property Taxes	5.4		5.4	5.6		5.6
Ad Valorem Bond Levy	-		-	-		-
Interest Income	2.4		2.4	2.1		2.1
Laboratory Services	4.4		4.4	4.5		4.5
Reimbursements	1.5		1.5	1.5		1.5
Permit Fees	1.6		1.6	1.6		1.6
Capacity Charges	4.0		4.0	4.0		4.0
All Other Revenue	<u>5.7</u>		<u>5.7</u>	<u>5.7</u>		<u>5.7</u>
<b>Total Operating Revenues</b>	140.2		140.2	144.4		144.4
<b>Capital Funding Sources</b>						
New Bond Proceeds		-	-		-	-
Loans Proceeds		-	-		-	-
Grants		-	-		-	-
Reimbursements		-	-		-	-
Commercial Paper		<u>-</u>	<u>-</u>		<u>-</u>	<u>-</u>
<b>Total Capital Sources</b>		0.0	0.0		0.0	0.0
Revenue Funded Capital	<u>(48.5)</u>	<u>48.5</u>	<u>-</u>	<u>(46.0)</u>	<u>46.0</u>	<u>-</u>
<b>Total Sources of Funds</b>	<b>91.7</b>	<b>48.5</b>	<b>140.2</b>	<b>98.4</b>	<b>46.0</b>	<b>144.4</b>
<b>Use of Funds</b>						
Operations	75.1		75.1	78.6		78.6
Debt Service	30.2		30.2	29.8		29.8
Capital Cash Flow	<u>-</u>	<u>48.5</u>	<u>48.5</u>	<u>-</u>	<u>46.0</u>	<u>46.0</u>
<b>Total Use of Funds</b>	<b>105.3</b>	<b>48.5</b>	<b>153.8</b>	<b>108.4</b>	<b>46.0</b>	<b>154.4</b>
<b>Ending Balance *</b>	<b>89.4</b>	<b>0.0</b>	<b>89.4</b>	<b>79.4</b>	<b>0.0</b>	<b>79.4</b>

\* Includes reserves for working capital, self-insurance, worker's compensation, contingency, rate stabilization, and capital projects.

## SOURCES OF FUNDS

The Wastewater System has a variety of revenue sources that are used to fund operations, and a portion of the capital expense. The remaining capital expense is funded primarily by bonds and reimbursements.

The table below displays FY18 actuals, FY19 budget, and projections for operating revenue and capital funding sources.

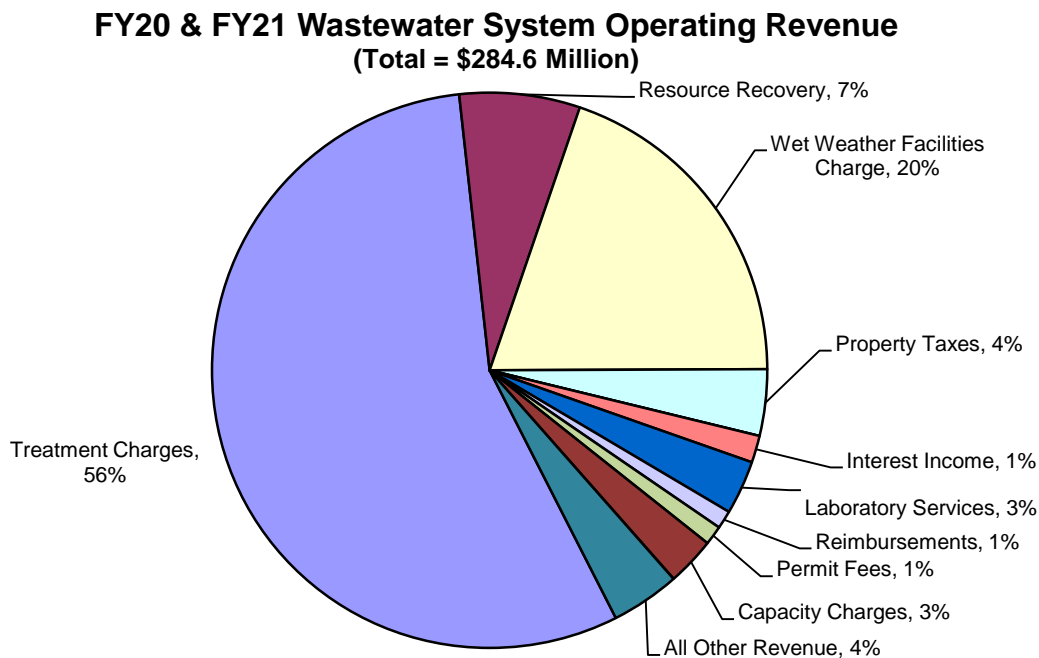
<b>Wastewater System Sources of Funds</b> (\$ Millions)				
	<b>FY18 Actuals</b>	<b>FY19 Budget</b>	<b>FY20 Budget</b>	<b>FY21 Budget</b>
<b>Operating Revenues</b>				
Treatment Charges	73.1	75.3	77.8	80.9
Resource Recovery	11.8	8.0	10.0	10.0
Wet Weather Facilities Charge	24.3	25.2	27.5	28.5
Property Taxes	5.4	4.9	5.4	5.6
Ad Valorem Bond Levy	1.3	0.0	0.0	0.0
Interest Income	0.9	1.5	2.4	2.1
Laboratory Services	4.4	4.3	4.4	4.5
Reimbursements	1.3	1.4	1.5	1.5
Permit Fees	1.7	1.6	1.6	1.6
Capacity Charges	11.7	1.9	4.0	4.0
All Other Revenue	5.9	5.7	5.7	5.7
<b>Total Operating Revenues</b>	<b>141.8</b>	<b>129.9</b>	<b>140.2</b>	<b>144.4</b>
Revenue Funded Capital	(20.9)	(25.8)	(48.5)	(46.0)
<b>Capital Funding Sources</b>				
Revenue Funded Capital	20.9	25.8	48.5	46.0
New Bond Proceeds	21	13.7	0.0	0.0
Loans Proceeds	-	-	-	-
Grants	-	-	-	-
Reimbursements	-	-	-	-
Commercial Paper	-	-	-	-
Construction Fund	-	-	-	-
<b>Total Capital Funding Sources</b>	<b>41.4</b>	<b>39.5</b>	<b>48.5</b>	<b>46.0</b>
<b>Total Wastewater Sources</b>	<b>162.3</b>	<b>143.6</b>	<b>140.2</b>	<b>144.4</b>

## Operating Revenue

Wastewater System operating revenues for FY20 are budgeted to increase \$10.3 million or 8.0 percent compared to FY19, for a total of \$140.2 million. The Treatment Charges total \$77.8 million, an increase of \$2.5 million compared to the FY19 budget. Resource Recovery revenue is increasing \$2.0 million to more closely reflect most recent actuals. Wet Weather Facilities Charge revenue in FY20 is projected to increase \$2.3 million from the FY19 budgeted amount. Property Tax revenue is increasing \$0.5 million to reflect projected collections. Interest Income is increasing \$0.9 million due to higher projected interest rates. Reimbursement income from the Water System is increasing \$0.1 million due to work done by Wastewater staff on the recycled water programs that benefit water system customers. Capacity Charge revenue is increasing \$2.1 million compared to FY19 due to continued building activity in the service area.

In FY21, Wastewater System operating revenues are budgeted to increase \$4.2 million, or 3.0 percent for a total of \$144.4 million. This increase is comprised primarily of the additional \$4.1 million from rate increases in the Treatment and Wet Weather Facilities Charges.

The figure below illustrates the various sources of revenue and the relative percentage each contributes to the total. Wastewater Treatment Charges revenue is the largest source of revenue comprising 56 percent of FY20 and FY21 total revenues. The second largest source of revenue is the Wet Weather Facilities Charge at 20 percent.



## **Operating Revenue Descriptions**

The following are descriptions of the sources of operating revenue, including information about the projected revenues for FY20 and FY21.

### **Treatment Charges**

The District provides treatment for discharges collected through city-owned sewers and transported through District interceptors and pump stations to the Main Wastewater Treatment Plant (MWWTP). Treatment Charges for all customers are based on the volume and strength of the wastewater discharged plus a service charge, and are collected on the water service bill. The overall rate increases for the various Treatment Charges are based on 4.0 percent for FY20 and an additional 4.0 percent for FY21. In addition to the overall rate increases for FY20 and FY21, the District completed a wastewater cost of service study in FY19 that resulted in small relative changes to the Treatment Charges and the Wet Weather Facilities Charge. After the 4.0 percent rate increase for FY20 and adjustments for the cost of service study, the Treatment Charge will total \$77.8 million, which is 3.3 percent higher than FY19. For FY21, the Treatment Charge will be \$80.9 million, an increase of \$3.1 million or 4.0 percent.

### **Resource Recovery**

Excess capacity at the MWWTP is utilized by accepting trucked waste. The Resource Recovery Program is projected to generate \$10.0 million in FY20 and in FY21.

### **Wet Weather Facilities Charge**

In June 1987, the Board of Directors established the Wet Weather Facilities Charge to pay for the costs associated with the District wet weather facilities. This charge is assessed on a per parcel basis and, while it is not a tax, the charge is collected on the county property tax bill. The charge is projected to collect approximately \$27.5 million in FY20, a 9.1 percent increase over the FY19 budget. In FY21, the projected revenue is \$28.5 million, a 3.6 percent increase.

### **Property Taxes**

The District receives a portion of the one percent county levy on properties within District boundaries. For FY21, revenues are projected to be \$5.6 million or \$0.2 million.

### **Interest Income**

The District places funds not needed for current expenditures in short-term investments, following the same procedures as the Water System. Interest Income in FY20 is projected to be \$2.4 million, an increase of \$0.9 million over the FY19 budgeted amount due to an increase in the projected interest rates. Interest Income in FY21 is projected to be \$2.1 million. Interest earned is assumed to be 2.5 percent in FY20 and in FY21.

**Laboratory Services**

The Wastewater laboratory provides testing and analysis services for the Water and Wastewater Systems and several outside agencies. The Water and Wastewater Systems share in the joint costs of operating the lab. Revenues from the Water System and outside agencies are projected to be \$4.4 million for FY20 and \$4.5 million for FY21.

**Reimbursements**

The Wastewater System is reimbursed from the Water System for work performed by Wastewater staff on the recycled water programs. In FY20 and in FY21, the estimated revenue from reimbursements is \$1.5 million.

**Permit Fees**

The District collects fees to fund its pollution prevention programs and the discharge permit programs. In FY20 and in FY21, the estimated revenue from these permit fees will be \$1.6 million.

**Capacity Charges**

Wastewater Capacity Fees (WCF) are collected from customers requesting new wastewater service. WCF revenue for FY20 and FY21 is projected at \$4.0 million each year, which is a \$2.1 million increase from the amount budgeted for FY19. Due to the increase in building development activity in the service area, the WCF revenue collected has been over \$8.0 million in each of the past three years. The budgeted WCF revenue of \$4.0 million assumes that the level of building development activity will remain higher than normal, but below the trend of the past three years.

**All Other Revenue**

Included in this category are lease revenue of District properties, reimbursements from the U.S. Treasury under the Build America Bonds program, revenue from energy sales at the Power Generation Station (PGS), and private sewer lateral fees. All Other revenue is expected to remain at \$5.7 million for FY20 and FY21.

## **Capital Funding**

The following are descriptions of the sources of capital funding. The Capital Improvement Program (CIP) will be funded with wastewater revenue and reserves; there is no anticipated issuance of bonds to pay for capital in FY20 and FY21. Revenue and reserves fund the \$48.5 million of capital projects in FY20 and \$46.0 million of capital projects in FY21.

### **New Bond Proceeds**

The District has the ability to issue long-term bonds to fund its capital program. The proceeds of the bond sales can be used to pay for capital expenses over several years. The repayment of the bonds is generally over 30 years and is paid from wastewater rate revenues.

### **Commercial Paper Issues**

In addition to issuing long-term bonds to fund its capital program, the District has used short-term borrowing in the form of commercial paper to raise revenues for capital expenses. The term of commercial paper can be up to 270 days. The repayment of commercial paper is paid from wastewater rate revenues.

### **Grants and Loans Proceeds**

The District pursues federal and state grants and low-interest loans to fund some of its capital projects when they meet the conditions of the grant and loan programs.

### **Reimbursements**

Some of the capital projects in the Wastewater System are performed at the request of other agencies, and the District is reimbursed for its expenses. An example would be the relocation of a portion of the sewer interceptor at the request of a city or state agency.

### **Revenue Funded Capital**

Annual capital expenses that are not paid from debt funding, grants, loans or reimbursements must be paid from revenues, either from current year revenues or from reserves.

Please refer to the section Debt Service and Financing for additional details on debt funding of capital projects.

## USE OF FUNDS

The Wastewater System has three types of expenditures:

**Operations**, or the annual costs of providing all wastewater services;

**Debt Service**, or the repayment of bonds for making capital investments in the wastewater system; and

**Capital cash flow**, or the annual costs of the CIP for long-term projects.

The following table shows the breakdown of expenses for operations, debt service, and capital cash flow.

Use of Funds (\$ Millions)				
Expenditure Type	FY18 Actuals	FY19 Budget	FY20 Budget	FY21 Budget
Operations	67.0	73.1	75.1	78.6
Debt Service	33.2	31.9	30.2	29.8
Capital Cash Flow	35.1	39.5	48.5	46.0
<b>Total Expenditures</b>	<b>135.4</b>	<b>144.6</b>	<b>153.8</b>	<b>154.4</b>

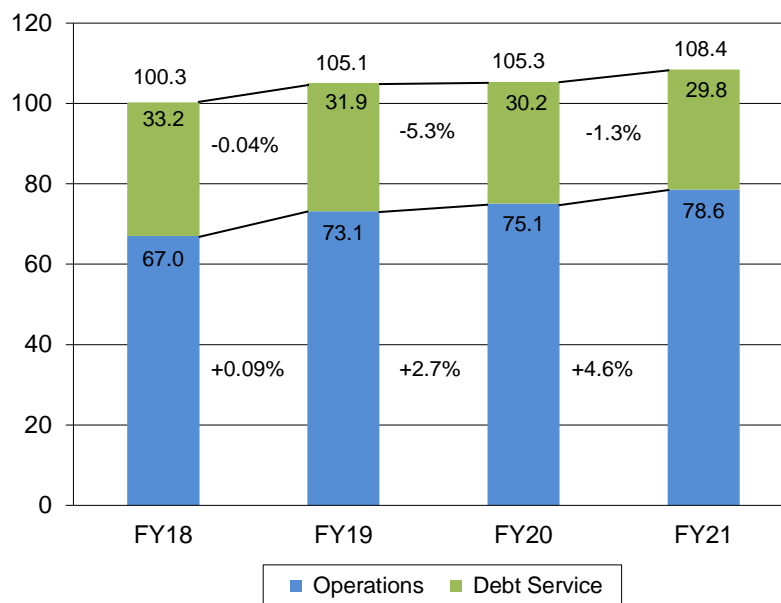


## Operating Budget

This section contains charts and tables which explain the major components of the Wastewater System operations budget. Typical operations expenditures include, but are not limited to labor, benefits, chemicals, energy, spoils/sludge disposal, parts, materials, and fees and licenses.

In FY20, the operations and debt service budget is increasing \$0.2 million or 0.2 percent over the FY19 budget, and in FY21 will increase \$3.1 million or 2.9 percent as shown below.

**FY18-FY21 Operations and Debt Service**  
(\$ Millions)



The operations budget is also shown on the following pages.

## Department Operating Budget

The operations portion of the Wastewater System budget is divided into three departments which are staffed, contingency, and administration of capital. The staffed department includes all employees assigned to work in the Wastewater department. The staffed department budget funds the day-to-day operations of the Wastewater System, and includes funding for labor, benefits, outside contract services and other non-labor expenses such as chemicals, energy, spoils and sludge disposal, parts and materials, and fees and licenses. A detailed description of the staffed department is included later in this chapter.

A small number of departments do not have personnel assigned to them and are referred to as non-staffed departments. The impact on the budget by each of the following departments varies:

**Contingency** - Funds are budgeted each fiscal year to cover projected labor-related expenses such as the employee cost of living adjustment which is based upon each year's February Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W) in the San Francisco-Oakland-Hayward area. The contingency budget also includes funding for unanticipated needs which may arise before the next budget cycle.

**Administration of Capital** - The administration of capital represents those costs that are not directly attributable to specific capital projects but are more generalized indirect support of the CIP. The administration of capital in the operations budget will decrease operating expense by a like amount and reallocate the costs to the capital budget.

The following table presents the total FY20 and FY21 Wastewater System operating budget by department.

Operating Budget by Department (\$ Millions)						
Departments	FY18 Actuals	FY19 Budget	FY20 Budget	% Chg	FY21 Budget	% Chg
Wastewater	70.5	76.4	75.4	-1.4%	77.1	2.3%
<b>Staffed Department</b>	<b>70.5</b>	<b>76.4</b>	<b>75.4</b>	<b>-1.4%</b>	<b>77.1</b>	<b>2.3%</b>
Contingency	0.2	(0.3)	2.7	-	4.5	-
Administration of Capital	(3.6)	(3.0)	(3.0)	0.0%	(3.0)	0.0%
<b>Operations</b>	<b>67.0</b>	<b>73.1</b>	<b>75.1</b>	<b>2.7%</b>	<b>78.6</b>	<b>4.6%</b>
Debt Service	33.2	31.9	30.2	-5.3%	29.8	-1.3%
<b>Total Operating</b>	<b>100.3</b>	<b>105.1</b>	<b>105.3</b>	<b>0.2%</b>	<b>108.4</b>	<b>2.9%</b>

## Department Operations Budget Highlights

The Wastewater System is comprised of one staffed department that performs all aspects of wastewater system operations. This section details the department's labor and non-labor budget, department goals and staffing.

### Labor and Benefits

Labor and benefits are allocated between the staffed department and contingency for cost of living adjustments. Cost of living adjustments are not shown in the staffed department's FY20 and FY21 labor and benefits budget since it is based on the CPI-W index and the amount is not known until the index is published annually. Once the index is published, and if funds are needed, contingency would be transferred to the department. The details of the department's labor and benefits budget are shown later in this chapter.

Additional positions have been funded over the prior biennial budget. A number of complex drivers impact the labor and benefits budget beyond funding additional positions. One of the major complex drivers is a slower than projected rise in benefit costs which offset rising labor costs compared to the prior biennial budget. In FY20, total labor and benefits compared to FY19 represent a decrease of 0.7 percent. Despite the upward pressures of funding additional positions, overtime and standby, the resulting decrease in total labor and benefits is primarily offset by a slower than projected rise in benefits cost. In FY21, total labor and benefit costs increase by 1.2 percent compared to FY20 primarily for scheduled step increases.

Unlike the Water System, the Wastewater System has only one staffed department as mentioned earlier. Therefore, the department's labor and benefits are explained in greater detail in the budget highlights later in this chapter.

### Non-labor

The Wastewater staffed department non-labor costs are budgeted to decrease \$1.0 million or 3.2 percent in FY20 and will increase \$1.2 million or 3.8 percent in FY21 compared to the prior fiscal year. A detailed explanation of the significant changes is shown in the department budget highlights section later in this chapter.

### Department Operations by Budget Category

The table below depicts the Wastewater System staffed department operations by expense category. It does not include capital labor; however, capital labor by department is shown later in this chapter.

FY20 & FY21 Department Operations by Categories (\$ Millions)										
Department	FY20				FY21					
	Labor	Cont	Svc	Other	Total	Labor	Cont	Svc	Other	Total
Wastewater	44.0		4.5	26.8	75.4	44.5		4.5	28.0	77.1
Total	44.0		4.5	26.8	75.4	44.5		4.5	28.0	77.1

## STAFFED DEPARTMENT OPERATIONS

This section describes the staffed department and includes the following topics:

**Overview** provides an overall statement about the key responsibilities of the department within the larger mission of the District as a whole.

**Description of Services Provided** describes the responsibilities of the department, by unit (division) or by function, including services required to meet regulatory or legal requirements.

**FY20 & FY21 Goals** highlight the highest priority tasks or projects related to the budget, and the District Strategic Plan.

**Department Budget Summary** is a reference table that shows the Department's operating budget expenditures by category (Labor and Benefits, Contract Services, Other Costs). It also includes capital labor to detail a more comprehensive view of the departmental budgets.

**Budget Highlights** shows changes in cost relative to the previous fiscal year and describes reasons for those changes. This section focuses on the significant budget change.

**Staffing Summary** is a reference table that shows the Full-Time Equivalency (FTE) for the department by appointment type (full-time, part-time, etc.).

**Staffing Changes** is a section included only if the department has position changes that require Board approval. It includes a table that enumerates position changes, followed by a brief description of the changes. The change in cost is determined by comparing the annual cost of the salaries and benefits of the current classification with the annual cost of the new classification at the top salary step.

## **WASTEWATER DEPARTMENT (WAS)**

### **OVERVIEW**

The Wastewater Department operates and maintains District wastewater treatment facilities to comply with environmental and public health requirements. The primary goal of the department is to ensure public health and safety by meeting or surpassing federal, state and local regulations regarding air, biosolids and water quality. The department strives to protect the environment by reducing or eliminating the discharge of toxic and noxious substances to the air, land and San Francisco Bay and recovering water, energy and nutrients from waste.

### **DESCRIPTION OF SERVICES PROVIDED**

The department includes the Wastewater Treatment, Wastewater Engineering, Laboratory Services, and Environmental Services divisions, as well as Infiltration/Inflow Control and Nutrient Management. These groups work together to operate and maintain the wastewater interceptor system, MWWTP, water recycling facilities, and three wet weather facilities. The department plans for future regulatory changes, such as those related to nutrient management; plans, designs and manages the construction of capital projects; monitors discharges from all wastewater customers; issues commercial and industrial discharge permits; manages the Regional Private Sewer Lateral Program and implements projects to reduce infiltration and inflow; and tests water and wastewater samples and reports analytical results.

### **FY20 & FY21 GOALS**

The department has a key role in the Water Quality and Environmental Protection, Long-Term Infrastructure Investment, and Long-Term Financial Stability Strategic Plan goals. Key department goals include:

- Initiating planning activities to cost-effectively balance long-term infrastructure renewal needs with future regulatory requirements;
- Rehabilitating infrastructure to maximize utilization of existing capital investments and to ensure operational reliability for protecting public health and the environment;
- Reducing environmental impacts on the San Francisco Bay during wet weather events through reducing inflow and infiltration and constructing facilities to improve wet weather flow management;
- Continuing a regional leadership role to ensure a collaborative, science-based approach to address potential nutrient impairment in San Francisco Bay; and
- Pursuing opportunities to grow the Resource Recovery Program to recover energy and nutrients from wastes.

## DEPARTMENT BUDGET SUMMARY (WAS)

The department's projected spending is compared to prior years in the table below.

Category (\$ Thousands)	FY18 Actuals	FY19 Budget	FY20 Budget	% Chg	FY21 Budget	% Chg
Total Labor and Benefits	50,830	54,775	54,406	-0.7%	55,061	1.2%
Less: Capital Labor and Benefits	(9,334)	(10,723)	(10,370)	-3.3%	(10,512)	1.4%
Operating Labor and Benefits	41,496	44,052	44,036	0.0%	44,549	1.2%
Contract Services	5,060	4,413	4,517	2.4%	4,531	0.3%
Other Costs	23,917	27,983	26,832	-4.1%	28,001	4.4%
<b>Operating Total</b>	<b>70,474</b>	<b>76,448</b>	<b>75,385</b>	<b>-1.4%</b>	<b>77,082</b>	<b>2.3%</b>

## BUDGET HIGHLIGHTS

The department's total operating budget in FY20 is decreasing \$1.1 million or 1.4 percent compared to FY19. In FY21, the budget will increase \$1.7 million or 2.3 percent compared to the prior fiscal year. Significant budget changes include:

### FY20

Total labor and benefits costs are projected to decrease \$0.4 million due to employees with lower starting salaries than employees they replaced and a slower than projected rise in benefits cost. Capital labor and benefit costs are decreasing \$0.4 million primarily due to the shift in labor to operating and a slower than projected rise in benefits cost. Contract services are increasing \$0.1 million primarily to support the Electrical Integrity Program (EIP). Other costs are decreasing \$1.2 million primarily for lower planned use of chemicals due to optimization but are offset by increases for spoils/sludge disposal, reimbursable costs to the Water System, fees/licenses, and equipment/vehicle rentals.

### FY21

Total labor and benefits costs are projected to increase \$0.7 million primarily due to scheduled salary step increases. Other costs will increase \$1.2 million primarily due to chemical costs, reimbursable expense to the Water System, spoils/sludge disposal, facility parts/materials, energy, vehicle usage, and additional drivers such as insurance premiums and license fees.

## STAFFING SUMMARY

The table below summarizes the transfers that have occurred among departments. There are no other staffing changes.

Position Type	FY18	FY19	FY20	FTE Chg	FY21	FTE Chg
Full-Time	283.0	284.0	283.0	(1.0)	283.0	0.0
Limited-Term / Temp Construction	4.0	5.0	5.0	0.0	5.0	0.0
Intermittent	0.0	0.0	0.0	0.0	0.0	0.0
Temporary / Part-Time	0.5	0.5	0.5	0.0	0.5	0.0
<b>Total FTE</b>	<b>287.5</b>	<b>289.5</b>	<b>288.5</b>	<b>(1.0)</b>	<b>288.5</b>	<b>0.0</b>

In FY20, one full-time FTE has been reassigned from the Inflow & Infiltration Program to the Inter-Governmental Affairs Office in the Water System.

## STAFFING

### Appointment Types

The majority of the workforce is comprised of full-time civil service or full-time civil service exempt positions. Limited-term positions are intended to augment regular staff to accomplish extra work or other operational programs or activities of a limited duration, with appointments for a maximum of 4 years. Temporary construction positions are also of a limited and specified duration typically associated with capital projects. Intermittent positions represent the smallest number of appointment types and typically work 32 hours instead of 40 hours per week. Part-time positions are normally restricted to 832 hours per year. Temporary positions are limited to a 6-month duration, and are full-time during that duration.

The table below provides the full-time equivalent (FTE) by department and compares the changes from year-to-year. Depending upon the appointment type, the FTE value will be different. Full-time, limited-term and temporary construction appointment types are equivalent to 1.0 FTE; intermittent appointment types are equivalent to 0.75 FTE; part-time and temporary appointment types are equivalent to 0.5 FTE.

<b>FY20 &amp; FY21 Department Staffing (FTE)</b>					
	<b>FY19 Budget</b>	<b>FY20 Budget</b>	<b>FTE Chg</b>	<b>FY21 Budget</b>	<b>FTE Chg</b>
<b>Wastewater System Total</b>	<b>289.5</b>	<b>288.5</b>	<b>(1.0)</b>	<b>288.5</b>	<b>0.0</b>

In FY20, the Wastewater System has one less FTE than in FY19. In FY21, there are no changes in FTE for Wastewater System.

### Bargaining Unit Changes

Tables below show the net change in bargaining unit status of authorized FTEs represented by different unions, Management/Confidential, non-represented groups, and civil service exempt positions. The tables reflect Board of Directors authorized additions and deletions.

<b>FY20 vs. FY19 Net Change in Bargaining Unit Status (FTE)</b>							
<b>Department</b>	<b>Local 2019</b>	<b>Local 444</b>	<b>Local 21</b>	<b>Local 39</b>	<b>MGR/ CNF</b>	<b>NRP</b>	<b>EXMPT</b>
Wastewater					(1)		
<b>Total Net Change</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>(1)</b>	<b>0</b>	<b>0</b>

<b>FY21 vs. FY20 Net Change in Bargaining Unit Status (FTE)</b>							
<b>Department</b>	<b>Local 2019</b>	<b>Local 444</b>	<b>Local 21</b>	<b>Local 39</b>	<b>MGR/ CNF</b>	<b>NRP</b>	<b>EXMPT</b>
Wastewater							
<b>Total Net Change</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>



## DEBT SERVICE AND FINANCING

This section describes the Wastewater System's current and projected debt obligations, current credit ratings, and adherence to the District's debt financing policies.

The District incurs debt to finance projects or purchase, repair or replace assets which will have useful lives equal to or greater than the related debt. Issuance of revenue supported debt is authorized by the Board of Directors, subject to a referendum process. Individual revenue bond issues are authorized by the Board of Directors.

The annual debt service principal and interest payments are charged to the operating budget. However, debt is only issued to finance capital investment activities.

### Outstanding Debt

The Wastewater System has a projected total outstanding debt of \$384.7 million as of June 30, 2019. The District's debt issues are summarized below and discussed in detail thereafter.

<b>Outstanding Debt (\$ Thousands)</b> <b>As of June 30, 2019</b>				
<b>Issue</b>	<b>Date of Issue</b>	<b>Last Maturity</b>	<b>Amount Issued</b>	<b>Debt Outstanding</b>
<b>LONG-TERM DEBT</b>				
<b>Revenue Bond</b>				
Series 2010A	10/20/2010	6/1/2029	58,095	2,680
Series 2010B (Build America Bonds)	10/20/2010	6/1/2040	150,000	150,000
Series 2012A	10/10/2012	6/1/2037	20,000	20,000
Series 2014A	8/28/2014	6/1/2031	82,150	62,935
Series 2015A	3/3/2015	6/1/2038	68,370	68,370
Series 2015B	3/3/2015	6/1/2030	2,795	2,145
Series 2017A	6/14/2017	6/1/2045	69,420	63,575
<b>Total Revenue Bonds</b>			<b>450,830</b>	<b>369,705</b>
<b>General Obligations Bonds</b>			<b>0</b>	<b>0</b>
<b>Total Long-Term Debt</b>			<b>450,830</b>	<b>369,705</b>
<b>SHORT-TERM DEBT</b>				
<b>Extendable Commercial Paper</b>	Various	Various	<b>N/A</b>	<b>15,000</b>
<b>TOTAL OUTSTANDING DEBT</b>				<b>384,705</b>

The District does not plan to issue additional new wastewater revenue bonds in FY20 or FY21. However, the District has a pending loan application with the California Clean Water State Revolving Fund. If this application is accepted, the District may enter into a new loan agreement during the two-year budget period.

## Debt Service

The Wastewater System total outstanding debt will cost the District approximately \$250.0 million in interest payments over the next 26 years, as detailed in the table below. The principal payments below do not include payment of extendable commercial paper (ECP) principal, as there is no final maturity associated with the notes.

Interest rates on ECP are projected at 3.0 percent for FY20 and thereafter.

<b>Projected Debt Service on Current Outstanding Debt</b> (\$ Thousands)			
<b>Fiscal Year</b>	<b>Principal</b>	<b>Interest</b>	<b>Debt Service</b>
2020	10,860	18,854	29,714
2021	10,955	18,370	29,325
2022	11,480	17,826	29,306
2023	12,010	17,257	29,267
2024	12,575	16,660	29,235
2025	13,155	16,036	29,191
2026	13,760	15,382	29,142
2027	14,220	14,698	28,918
2028	14,925	13,990	28,915
2029	15,670	13,247	28,917
2030	16,445	12,475	28,920
2031	17,255	11,661	28,916
2032	18,115	10,805	28,920
2033	19,010	9,909	28,919
2034	19,955	8,963	28,918
2035	20,945	7,972	28,917
2036	21,985	6,933	28,918
2037	23,075	5,842	28,917
2038	24,365	4,697	29,062
2039	26,250	3,441	29,691
2040	27,610	2,082	29,692
2041	940	653	1,593
2042	975	616	1,591
2043	1,015	577	1,592
2044	1,055	536	1,591
2045	1,100	494	1,594
<b>TOTAL</b>	<b>369,705</b>	<b>249,976</b>	<b>619,681</b>

The debt service in the table above differs from amounts for debt in the budget. Budgeted figures include additional costs associated with the debt portfolio including re-marketing fees and debt service administration.

## Debt Ratings

Credit risk is the risk that the issuer of an investment, such as a revenue bond, will not fulfill its obligation to the holder of the investment. Credit ratings are assigned to bonds by Nationally Recognized Statistical Credit Rating Organizations (NRSROs) based on published methodologies. The ratings reflect the organizations' opinions about the issuer's ability and willingness to meet its financial obligations on time and in full.

The District's strong credit ratings provide tangible benefits to ratepayers in the form of reduced debt service cost. A strong credit rating provides better access to capital markets, lower interest rates, better terms on debt, and access to a greater variety of debt products. Prudent financial management policies have contributed to the District's strong ratings shown in the table below.

As of January 1, 2019, ratings on the Wastewater System's debt were as follows:

<b>Wastewater System Debt Ratings</b>			
<b>Debt by Type</b>	<b>Standard &amp; Poor's</b>	<b>Moody's Investors Service</b>	<b>Fitch</b>
Fixed Rate Revenue Bonds	AAA	Aa2	AA+
Extendable Commercial Paper	A-1+	P-1	F1+

## **Debt Management Policy and Debt Service Coverage**

The District is subject to legal debt limits prescribed in the Municipal Utility District (MUD) Act. The MUD Act describes three types of legal limitations: general debt limits, revenue bond limits, and short-term borrowing limits.

The District's general debt indebtedness cannot exceed the ordinary annual income and revenue of the District without a two-thirds approval of the voters. However, revenue bonds are not included in general debt limits.

The District is authorized to issue revenue bonds with the approval of a resolution from the Board of Directors, subject to a 60-day referendum period. The resolution specifies the maximum principal amount of bonds that may be issued pursuant to the authorization. The Board of Directors also approves individual series of revenue bonds issued under the broader authorization.

The MUD Act authorizes the District to issue short-term indebtedness without an election of the voters. The amount of short-term borrowing cannot exceed the lesser of 1) the annual average total revenue of the three preceding years or 2) 25 percent of the District's total outstanding bonds. This provision is substantially the same as the District's internal policy discussed below.

The District has also established its own policy regarding debt management (Policy 4.02: Cash Reserves and Debt Management – see Appendix). The purpose of the debt policy is to maintain a balance between current funding sources and debt financing over each five-year plan horizon in order to retain the District's financing flexibility and achieve the lowest cost of financing.

The District's debt management policy is to:

- a) maintain an annual revenue bond debt service coverage ratio of at least 1.6 times;
- b) limit debt-funded capital to no more than 65 percent of the total capital program over each five-year planning period; and
- c) limit commercial paper/variable rate debt to 25 percent of outstanding long-term debt.

## **Debt Service Coverage Ratio**

The debt service coverage policy ensures that the District has sufficient annual operating revenues to pay its operating expenses and meet its debt service obligations on its revenue bonds and other parity debt. The revenue bond debt service coverage ratio is defined as the District's net operating revenue (current year's operating revenue less the current year's operating expenses) divided by the current year's debt service on all revenue bonds and other parity debt. Net revenues are reduced by any Rate Stabilization Fund deposits and increased by any withdrawals. For the Wastewater System, Build America Bonds subsidies are treated as an offset to debt service and are excluded from the net operating revenue for the purpose of the ratio calculation. In FY20 and FY21, the projected debt coverage ratios are 2.34 and 2.40, respectively.

## Debt-Funded Capital

The percentage of the capital program that is funded by debt over the five-year planning period FY20-24 is projected at 20.1 percent, which is below the financial policy maximum target of 65 percent. The debt percentage funding levels for FY20 and FY21 are shown in the table below.

<b>Projected Debt Percentage of Funding</b> (\$ Millions)		
	<b>FY20</b>	<b>FY21</b>
<b>Expenditures</b>		
Capital Cash Flow	45.5	43.0
Administration of Capital	<u>3.0</u>	<u>3.0</u>
<b>Total Expenditures</b>	<b>48.5</b>	<b>46.0</b>
<b>Project Funding</b>		
New Bond Proceeds	-	-
Loans Proceeds	-	-
Commercial Paper	-	-
Construction Fund	<u>-</u>	<u>-</u>
<b>Total Resources</b>	<b>0.0</b>	<b>0.0</b>
<b>Debt Percentage of Funding</b>	0.0%	0.0%

## Commercial Paper and Variable Rate Debt Ratio

The District has authorized a short-term ECP borrowing program consistent with the MUD Act and the District's debt management policy. Under this program, the District may issue commercial paper notes at prevailing interest rates for periods of not more than 120 days from the date of issuance with the option by the District to extend the maturity for another 150 days. The program is not supported by any liquidity or revolving credit agreement. The Wastewater System ECP is secured by a pledge of the Wastewater System's net revenues, subordinate to the System's revenue bonds.

As of June 30, 2019, \$15.0 million of Wastewater ECP is projected to be outstanding under the program. Wastewater System ECP will comprise 3.9 percent of the approximately \$384.7 million in total outstanding debt.

Other than the ECP, the Wastewater System has no additional variable rate debt outstanding.

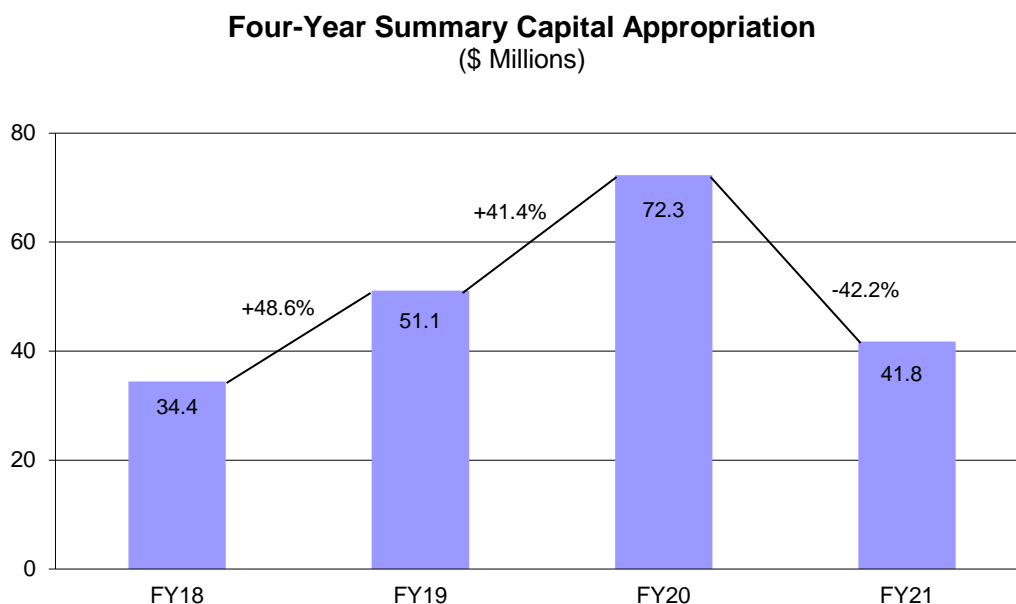
# CAPITAL IMPROVEMENT PROGRAM

The CIP consists of projects that typically result in the construction of new facilities, or the rehabilitation or upgrade of existing facilities. Project costs include all expenditures required to study, plan, design, construct or upgrade new or existing facilities. Projects can also include large equipment purchases and the creation or replacement of computer systems.

## Capital Appropriation

Capital appropriations are the amounts approved by the Board to be spent on projects in the CIP. Since these appropriations are often spent over multiple years, the amounts appropriated for each fiscal year will vary depending upon project scope and timing, and any unspent appropriation a project may already have.

The Wastewater System's FY20 appropriation totals \$72.3 million, an increase of \$21.2 million or 41 percent from FY19. In FY21, the appropriation totals \$41.8 million, a decrease of \$30.5 million or 42 percent from FY20. The Wastewater System appropriations for FY20 and FY21 and the prior two years are summarized below.



The FY20-24 Wastewater System CIP requires \$286.2 million in project appropriations, an increase of \$127.0 million or 80 percent from the FY18-22 CIP. The increase is primarily due to increased appropriation needs in the Maintaining Infrastructure Strategy for improving the infrastructure at the MWWTP.

The Wastewater System appropriations focus on the Maintaining Infrastructure Strategy, which comprises 94 percent of the CIP appropriations. All Wastewater System appropriations by strategy are summarized below.

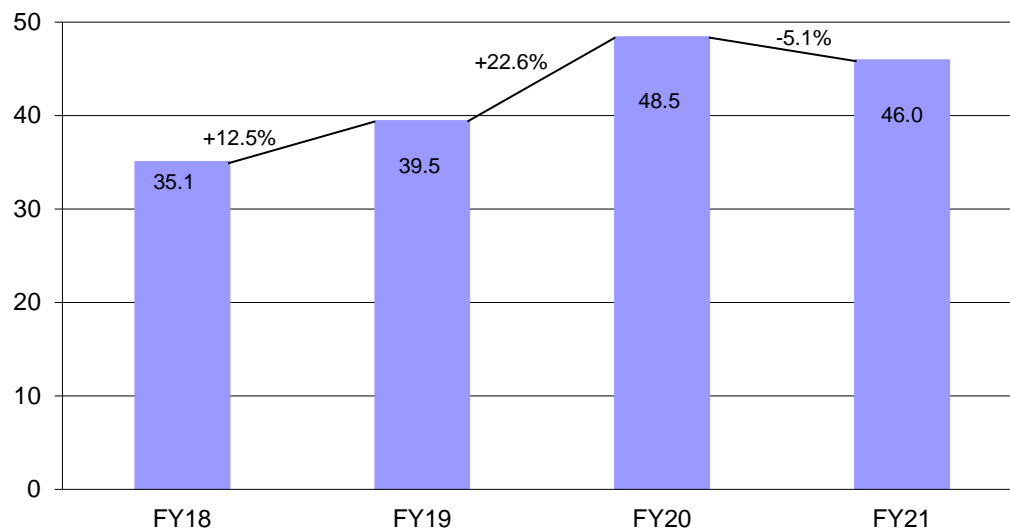
<b>FY18-22 vs. FY20-24 Appropriation Capital Improvement Program by Strategy</b> (\$ Thousands)				
<b>Strategy</b>	<b>Appropriation</b>		<b>\$ Chg</b>	<b>% Chg</b>
	<b>FY18-22</b>	<b>FY20-24</b>		
Maintaining Infrastructure	122,369	254,538	132,169	108%
Regulatory Compliance	17,956	16,068	(1,888)	-11%
Non-Program Specific	3,300	-	(3,300)	-100%
<b>Strategy Subtotal</b>	<b>143,625</b>	<b>270,606</b>	<b>126,981</b>	<b>88%</b>
Administration of Capital	15,551	15,598	47	0%
<b>Total Wastewater</b>	<b>159,176</b>	<b>286,204</b>	<b>127,028</b>	<b>80%</b>

### Capital Cash Flow

Capital cash flows are the amounts projected to be spent each fiscal year on projects in the CIP. The amount of cash flow spending varies each year as projects progress from one phase to another, such as from planning to design and then construction, and as existing projects are completed and new ones started.

The Wastewater System's FY20 cash flow totals \$48.5 million, an increase of \$9.0 million or 23 percent from FY19. In FY21, the cash flow totals \$46.0 million, a decrease of \$2.5 million or 5 percent from FY20.

**Four-Year Summary Capital Cash Flow**  
(\$ Millions)



The FY20-24 CIP identifies \$234.5 million in projected cash flow spending, an increase of \$46.8 million or 25 percent compared to the FY18-22 CIP. The increase is primarily attributable to the Maintaining Infrastructure Strategy for improving the infrastructure at the MWWTP including rehabilitation of concrete basins, power generation and electrical system, first generation digesters, and the administration building and laboratory. Under the Regulatory Compliance Strategy, decreases are associated with deferring the Nutrient Management Project to evaluate a range of nutrient reduction alternatives, as part of an integrated master planning effort to proactively address increasingly stringent environmental regulations and aging infrastructures.

All Wastewater System cash flows by strategy are summarized below.

<b>FY18-22 vs. FY20-24 Cash Flows</b>				
<b>Capital Improvement Program by Strategy (\$ Thousands)</b>				
<b>Strategy</b>	<b>Cash Flows</b>		<b>\$ Chg</b>	<b>% Chg</b>
	<b>FY18-22</b>	<b>FY20-24</b>		
Maintaining Infrastructure	153,253	205,868	52,615	34%
Regulatory Compliance	18,878	13,003	(5,875)	-31%
Non-Program Specific	-	-	-	0%
<b>Strategy Subtotal</b>	<b>172,131</b>	<b>218,872</b>	<b>46,741</b>	<b>27%</b>
Administration of Capital	15,551	15,598	47	0%
<b>Total Wastewater</b>	<b>187,682</b>	<b>234,469</b>	<b>46,787</b>	<b>25%</b>

In accordance with the District's ten-year capital planning horizon, approximately \$245.0 million of work has been tentatively identified for FY25-29. These estimates will be revised based on studies, redefined priorities, and as new needs emerge. Therefore, the focus is on the first five years of the CIP.

Select programs and projects are discussed in more detail in the following pages. In addition, a description of each project including recent accomplishments and future work is provided in a supplemental volume of this budget book for every project that has work planned in FY20-24.



## Capital Labor

The capital labor component of the CIP totals over \$10 million per fiscal year. The following table shows the capital labor and benefits budget.

<b>Capital Labor By Department</b> (\$ Thousands)						
	<b>FY18 Actuals</b>	<b>FY19 Budget</b>	<b>FY20 Budget</b>	<b>% Chg</b>	<b>FY21 Budget</b>	<b>% Chg</b>
Wastewater	9,334	10,723	10,370	-3.3%	10,512	1.4%
<b>Total Department</b>	<b>9,334</b>	<b>10,723</b>	<b>10,370</b>	<b>-3.3%</b>	<b>10,512</b>	<b>1.4%</b>

The Wastewater Department capital labor budget is decreasing \$0.4 million in FY20 compared to FY19 primarily due to a shift in personnel costs from capital to the operating budget. In FY21, the capital labor budget will increase 1.4 percent primarily due to scheduled salary step increases.

## Capital Program Highlights

All Wastewater System FY20-24 appropriations are shown below by strategy and program, with select programs and projects discussed in more detail to provide a sense of the work that is projected to take place over the next ten years.

### MAINTAINING INFRASTRUCTURE STRATEGY

This strategy furthers the District's objectives to improve, rehabilitate and replace aging infrastructure in a cost effective manner to ensure sustainable delivery of reliable, high quality service at both the MWWTP and remote facilities. Work under this strategy focuses on rehabilitating the digesters, concrete structures, and treatment process facilities at the MWWTP; upgrading the resource recovery receiving station; rehabilitating sections of the sewer interceptors; expanding and improving the PGS; and retrofitting various structures at the MWWTP. The FY20-24 program strategy appropriations are as follows:

Appropriations (\$ Thousands)						
Program	FY20	FY21	FY22	FY23	FY24	Total
Wastewater Infrastructure Program	61,278	38,753	30,035	53,515	70,957	254,538
<b>Total</b>	<b>61,278</b>	<b>38,753</b>	<b>30,035</b>	<b>53,515</b>	<b>70,957</b>	<b>254,538</b>

#### Wastewater Infrastructure Program

The Treatment Plant Infrastructure Projects provide for the cyclical replacement and rehabilitation of various treatment process facilities at the MWWTP. Work planned in FY20-24 includes leveling the weirs at the primary sedimentation tanks and secondary clarifiers to improve the wastewater treatment process; replacing equipment at the grit handling building and the aerated grit tanks; replacing the roof, HVAC and fire system at the administration building and operations center; making improvements to the dewatering sludge well; correcting deficiencies in the influent and effluent magnetic flow meters and valves; repairing the interior pipe & coating for the eight secondary reactors; replacing the two underground storage tanks that hold waste oil with one larger above ground tank; replacing the influent screens and sensors; repairing and replacing pipes in the plant drain system through FY26; and replacing the reversing heat exchangers and control systems at both oxygen plants through FY26.

Work planned in FY25-29 includes replacing aging motors and variable frequency drives (VFDs), and rebuilding the four main pumps at the Effluent Pump Station; replacing aging motors and VFDs for the main pumps at the Influent Pump Station; installing a scum capture and control system in the mixed liquor channel, along with a controlled hydrodynamic cavitation unit for the destruction of nocardia bacteria that creates operational challenges; and rehabilitating the remaining 10 of 12 clarifiers from FY22 through FY29.

The Digester Upgrade Project will rehabilitate several digesters which perform a key role in stabilizing wastewater solids prior to disposal. Interior coatings applied to some digesters are experiencing failure. The cause of the failure is being investigated and the coatings will be repaired over time in FY20-29. In FY19-22, the floating covers on Digester 3 and 4, and the membrane on Digester 2 will be replaced while seismic upgrades, mechanical piping work, and associated electrical and control upgrades are made. Additional digester work is scheduled for FY27-29 including the addition of external pump mixing for the second-stage digesters, replacing the digester control building roof, and electrical upgrades.

The Concrete Rehabilitation Project addresses critical concrete structures, channels and gates at the MWWTP as sulfides and other constituents in the wastewater accelerate corrosion. Repair of the primary tank channels is being conducted in phases and includes replacement of valves, gates and control panels. Phases 5 and 6 are scheduled to take place in FY19-24. Repairs to the secondary aeration reactor basins will be completed in four phases with the repair of eight tanks starting in FY20 and continuing through FY28.

The Interceptor Rehabilitation Program includes several projects to rehabilitate portions of the interceptor system that are approximately 60 years old. In FY19-21, the second phase to rehabilitate a 4,700 foot portion of the 105 inch diameter Oakland South Interceptor along 3rd Street will be completed. In FY20-23, repairs will be made to various sections of the South Interceptor pipe, along with manholes and flow control structures. In FY22-25, a new pipe across the Alameda Channel will be installed. In FY23-26, a 6,000 foot portion of the Alameda Interceptor will be rehabilitated, and in FY24-27, a 1,900 foot portion of the Oakland South Interceptor along the Embarcadero will be rehabilitated.

The Pump Station Improvements Program includes upgrades to various pump stations such as the replacement of sump pumps and flow meters; the addition of programmable logic controllers and software; access improvements; and replacement of discharge piping. In FY20-24, work is scheduled for Pump Station M in Alameda and Pump Station L in Oakland. In FY25-29, work is scheduled for Pump Station C in Alameda, Pump Stations H and J in Oakland and Pump Station A in Albany.

The Resource Recovery Program was developed to accept a wide variety of solid and liquid wastes delivered by truck to the MWWTP. Work in FY20-24 includes new equipment and upgrades to the fat, oils and grease trucked waste receiving station; a new storage tank, piping and accessories to process additional brine wastes for discharge to the Effluent Channel; and repairing the concrete and recoating the solid/liquid waste receiving tanks.

The Power Generation Station Expansion Project includes work to improve the reliability of this renewable energy source by replacing aging gas piping and mechanical equipment, and rehabilitating the original four flares in FY20-23.

The Seismic Retrofits Project will make improvements to various facilities at the MWWTP. In FY20-23, improvements will be made to the power distribution system to protect electrical and fuel lines. In FY24-29, proposed work includes retrofits to various facilities and structures at the MWWTP including the Influent Pump Station.

## REGULATORY COMPLIANCE STRATEGY

This strategy furthers the District's objectives to operate and maintain facilities to meet all water discharge, air emission, and land disposal requirements; ensure protection and stewardship of San Francisco Bay; and implement preventative and corrective maintenance programs. Work under this strategy focuses on upgrading the dechlorination facilities to protect the San Francisco Bay; upgrading the Wet Weather Treatment Facilities (WWFs) and sewer interceptors to maintain reliable operations; and developing strategic nutrient management solutions to meet potential future regulatory requirements. The FY20-24 program strategy appropriations are as follows:

<b>Appropriations (\$ Thousands)</b>						
<b>Program</b>	<b>FY20</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>Total</b>
Regulatory Compliance Program	7,997	0	923	7,148	0	16,068
<b>Total</b>	<b>7,997</b>	<b>0</b>	<b>923</b>	<b>7,148</b>	<b>0</b>	<b>16,068</b>

### Regulatory Compliance Program

The Dechlorination Facility Improvements Project will upgrade the existing dechlorination facilities which ensure the continuous dechlorination of effluent prior to discharge to San Francisco Bay. Work in FY20-24 includes seismic upgrades to the Injector Building and standby power; modifications of the Distributed Control System controls; automation of the dechlorination process; and replacement of the Sodium Bisulfite System storage tanks.

The Pump Station Q (PS Q) Project located in Berkeley includes modifications to portions of the North Interceptor to allow dual-mode operation of PS Q as either a gravity relief sewer (north to south flow) or a forcemain (south to north flow). Based on wet weather flow modeling, discharges from the wet weather facilities may be reduced by operating the PS Q forcemain as a gravity sewer with relatively minor modifications. Work began in FY17 and is expected to be completed in FY20.

The Wet Weather Plant Improvements Project includes instrumentation upgrades at Point Isabel (Richmond) in FY19-21, and concrete rehabilitation and liner repairs at Point Isabel and Oakport (Oakland) in FY22-25. New wash-down monitors/water cannons will be installed at Point Isabel in FY23-24.

The Nutrient Management Project includes the development of strategic nutrient management solutions to meet potential future regulatory requirements as nutrient discharge to the San Francisco Bay continues to be a key area of concern for regulators. This project includes the development of a master plan to identify and evaluate a range of cost-effective alternatives to achieve nutrient reductions for the MWWTP that provide broad environmental and public health benefits.

## NON-PROGRAM SPECIFIC STRATEGY

This strategy, when used, furthers the District's objective to maintain a strong financial position to meet both short and long-term needs. The Contingency Program focuses on making funds available for unanticipated needs, and for projects that are seeking grants to pay for a substantial portion of the project's cost.

<b>Appropriations</b> (\$ Thousands)						
<b>Program</b>	<b>FY20</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>Total</b>
Contingency Program	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

### Contingency Program

Contingency provides funding for unanticipated needs that may arise before the next budget cycle, such as replacement or repairs to facilities and equipment as a result of failures or safety deficiencies, and new projects or the acceleration of planned projects requiring funding before the next budget cycle. Funds may also be set aside for projects where grants are being sought in the event that the grant application is successful as most grants require the District to fund the project and then apply for reimbursement of allowable costs.

At this time, no additional appropriations are needed since sufficient funds are available to meet wastewater needs.

## **Capital Appropriation Summary**

This section provides a summary of the five-year appropriation for the Wastewater System projects listed in the CIP, sorted by strategy and program. When the CIP is presented to the Board of Directors, the Board approves the overall five-year plan, but adopts just the first two years of the plan. The remaining three years are for planning purposes only and are subject to revision.

## **Department Abbreviations**

The abbreviation for the Lead Department responsible for each capital project is as follows:

WAS – Wastewater Department

Capital Improvement Projects		Dept	Prior Approp	FY20-24 APPROPRIATIONS (IN 000's)					
				FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	5 YR TOTAL
MAINTAINING INFRASTRUCTURE									
WW Infrastructure Program									
3rd St Sewer Interceptor Rehab	WAS	24,286	4,000	0	0	0	0	14,000	18,000
Biosolids Improvements Project	WAS	500	0	0	0	0	0	0	0
Centrifuge Replacement	WAS	22,403	0	0	0	0	0	11,726	11,726
Collection System Master Plan	WAS	0	0	0	0	0	0	200	200
Concrete Rehab at SD1	WAS	40,682	1,950	184	1,900	3,610	0	7,644	7,644
DCS Upgrades	WAS	10,237	275	0	0	4,000	0	4,275	4,275
Digester Upgrade	WAS	126,495	2,000	0	0	0	0	2,000	2,000
Interceptor Corrosion Prevent	WAS	8,221	409	0	6,900	11,764	0	19,073	19,073
Lab Improvements & Equip't	WAS	4,072	2,156	85	100	100	100	100	2,541
MWWTP Master Planning	WAS	19,827	1,600	0	0	0	0	1,600	1,600
MWWTP Pwr Dist Sys Upgrade	WAS	15,139	913	0	0	0	0	913	913
Motor Control Center Repl	WAS	2,529	0	0	0	1,350	0	1,350	1,350
North Interceptor Rehab	WAS	0	0	0	0	0	0	0	0
Odor Control Improvements	WAS	23,881	0	0	0	0	0	0	0
Outfall Investigation Project	WAS	4,085	0	0	0	0	0	0	0
PGS Engine Overhaul	WAS	9,829	0	0	0	1,800	0	1,800	1,800
PGS Expansion	WAS	50,541	3,276	0	3,400	0	0	6,676	6,676
Plant Pipe Replacement	WAS	7,178	4,538	143	0	0	0	4,681	4,681
Procure Emerg Response Equipmnt	WAS	1,875	0	0	0	0	0	0	0
Pump Station A Improvements	WAS	0	0	0	0	0	0	0	0
Pump Station C Upgrades	WAS	1,864	0	0	0	0	0	0	0
Pump Station H Imprvrmts	WAS	6,134	0	0	0	0	0	0	0
Pump Station J Upgrades	WAS	0	0	0	0	0	0	4,250	4,250
Pump Station L Improvement	WAS	1,490	0	0	0	0	0	0	0
Pump Station M Imprvrmts	WAS	5,898	1,200	0	0	0	0	1,200	1,200
Pump Station Rehab and Upgrade	WAS	181	0	60	600	0	0	660	660
Resource Recovery Project	WAS	36,838	5,637	0	2,387	0	0	8,024	8,024
Routine Cap Equip Replacement	WAS	32,787	2,500	2,500	2,500	2,500	2,500	12,500	12,500
Seismic Retrofits	WAS	0	4,884	0	0	0	0	36,800	41,684
Treatment Plant Infra Ph 2	WAS	20,379	14,410	21,818	6,422	27,251	0	69,901	69,901
Treatment Plant Infrastructure	WAS	56,415	8,522	13,963	5,646	1,140	1,381	30,652	30,652
Vehicle & Equip Additions, WW	WAS	1,237	27	0	0	0	0	27	27
WW Energy Management	WAS	2,990	0	0	180	0	0	180	180

Capital Improvement Projects		Dept	Prior Approp	FY20-24 APPROPRIATIONS (IN 000's)					
				FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	5 YR TOTAL
WW Information System Upgrades		WAS	2,160	2,981	0	0	0	0	2,981
West End Property Development		WAS	1,382	0	0	0	0	0	0
WW Infrastructure Program Total			541,534	61,278	38,753	30,035	53,515	70,957	254,538
MAINTAINING INFRASTRUCTURE TOTAL			541,534	61,278	38,753	30,035	53,515	70,957	254,538
NON-PROGRAM SPECIFIC									
WW Non-Program Specific									
Contingency Project Wastewater		WAS	18,719	0	0	0	0	0	0
WW Non-Program Specific Total			18,719	0	0	0	0	0	0
NON-PROGRAM SPECIFIC TOTAL			18,719	0	0	0	0	0	0
REGULATORY COMPLIANCE									
WW Regulatory Compliance									
Dechlorination Facility Imprmts		WAS	4,357	4,077	0	0	0	0	4,077
Infiltration/Inflow Contrl Prj		WAS	27,012	1,900	0	0	0	0	1,900
NPDES Compliance		WAS	8,643	1,200	0	0	6,090	0	7,290
Nutrient Management		WAS	5,300	0	0	0	0	0	0
PS Q FM Dual-Mode Operation		WAS	15,308	0	0	0	0	0	0
Wet Weather Plant Imprmts		WAS	9,267	820	0	923	1,058	0	2,801
WW Regulatory Compliance Total			69,887	7,997	0	923	7,148	0	16,068
REGULATORY COMPLIANCE TOTAL			69,887	7,997	0	923	7,148	0	16,068
APPROPRIATIONS SUMMARY (IN 000'S)									
Prior				FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	5 YR TOTAL
630,139				69,275	38,753	30,958	60,663	70,957	270,606



## **Operating Budget Impact of Capital Investments**

The FY20-24 CIP includes various significant nonrecurring capital projects that will affect the operating budget and the services that the District provides. Such projects and their potential impacts include:

### **Digester Upgrades - Phase 3**

This work rehabilitates and improves Digesters 2, 3, and 4. Floating covers on Digester 3 and 4 will be replaced with new fixed covers and the existing cover on Digester 2 will be replaced; these digesters will also be seismically upgraded to restrain the walls at the base; other work includes piping upgrades and improved mixing; and associated electrical and controls upgrades. Digester coatings will be repaired for Digester 7.

The increase in gas storage for energy production from the new fixed covers may increase energy sales slightly and is also anticipated to reduce the need for flaring. Operational costs are expected to decrease slightly once the improved piping and mixing systems are operational based on better access for maintenance and improved reliability. Seismic improvements will improve reliability and resiliency, and reduce future repair or replacement costs following a major earthquake.

### **Resource Recovery Odor, Grit and Miscellaneous Improvements**

This project includes new equipment and upgrades to the fats, oils, and grease (FOG) Trucked Waste Receiving Station to improve odors, equipment reliability, and safety. A new odor control treatment system is planned to reduce odor complaints. New grit removal equipment will be tested to minimize grit from trucked wastes that cause excessive damage to downstream solids handling equipment and to minimize the amount of grit entering the digesters; FOG station safety improvements are included.

Operating costs for the new odor control system will be slightly less compared to the current costs for maintaining the existing equipment. Reliability and performance will significantly improve. Detailed costs will be determined during the design phase. This portion of the project is currently in the planning phase.

Operating costs for the new grit removal system at the blend tanks will significantly decrease operating and maintenance costs for repairing damaged pumps and equipment.

### **Main Wastewater Treatment Plant Administrative Building Improvements**

This project includes HVAC, roofing and fire protection improvements for the Administration Building and Laboratory at the MWWTP. Phase 1 includes replacement for the main chiller for the cooling system. Phases 2 and 3 include roof replacement, HVAC air handler replacement/rehabilitation, water distribution piping replacement, HVAC management system upgrades, and fire protection system upgrades.

Once implemented, these improvements will decrease operating costs due to an anticipated 15 to 20 percent reduction in power demand. Maintenance costs for roof repairs will also be reduced since the roof is at the end of its useful life.

### **Power Generation Station Reliability Improvements - Phase 3**

This project includes piping replacements and improvements to the gas conditioning system to provide redundancy in order to reduce unplanned outages of the PGS. Operating costs for the improvements are not anticipated to significantly change; however, long term reliability and resiliency will improve.

**MWWTP Hypochlorite Pipe Replacement - Phase 2**

This project replaces and upgrades the existing PVC piping for sodium hypochlorite at the MWWTP in continuation of the work done under Phase 1 of the same project. The existing PVC piping requires periodic replacement due to a limited lifespan when used for sodium hypochlorite service. New piping will use a chemically resistant HDPE material, providing a significantly longer service life compared to PVC for this chemical service.

Operating costs for this project are not anticipated to significantly change. However, long-term maintenance and replacement costs are anticipated to decrease with the reduction of system leaks and associated equipment damage with the existing PVC piping.

**Pump Station M and Force Main Improvements**

This project rehabilitates Wastewater Pump Station M in Alameda. Mechanical work includes refurbishing the main pumps, pipes, ventilation system and odor control system. Electrical work includes replacing the old electrical equipment with new above-grade equipment and upgrading the controls for improved remote monitoring. Structural improvements include new access stairs to the dry well for improved safety. The existing sodium hypochlorite storage tank and chemical feed system used for odor control will be replaced, possibly with a new ozone feed system that would eliminate the need for routine chemical use. Operating costs should reduce slightly from eliminating chemical costs for sodium hypochlorite at the facility.

## **FIVE-YEAR FINANCIAL FORECAST**

### **SUMMARY**

The five-year financial forecast presents the estimated impact of operations, debt service requirements and reserve balances on rate projections over the five-year period.

This forecast is built upon:

- Adopted District financial policies
- Capital investments in the FY20-FY24 CIP

This forecast identifies rate increases for the Wastewater System based on estimated increases in operating and capital expenditures to maintain service levels, meet mandated program requirements, and fund increased capital expenditures.

On average over the five-year period, revenues are forecast to increase by 3.5 percent per year to cover the increases in operating and capital expenses, and maintain a minimum of 1.6 times coverage on revenue bond debt service. Forecasted operating expenses are expected to grow by 4.1 percent per year over the five-year period. Debt service increases slightly by 2.2 percent per year over the five-year period.

The key factors driving the need for increased Wastewater System revenues are:

- Increasing labor and benefit costs
- Inflation on non-labor products and services

For all five years, the cash reserves exceed the cash reserve targets. Reserves in excess of those needed to meet financial reserve targets are available to pay for a significant portion of the capital program expenses with cash, a positive financial metric.

Capital cash flow spending, including administration of capital expenses, is projected at \$234.5 million over the five-year period. Major projects to be undertaken during this period include: Treatment Plant Infrastructure, Digester Upgrades, 3<sup>rd</sup> Street Sewer Interceptor Rehabilitation, Concrete Rehabilitation, and Resource Recovery Improvements.

The projected average percentage of capital funded from debt will be 20.1 percent over the five-year period significantly lower than the financial policy maximum target of 65 percent. In FY20 and FY21, the debt coverage ratio is projected at 2.34 and 2.40, respectively, and for FY20 through FY24, the ratio exceeds the target coverage ratio of 1.60.

## OPERATIONS

The following table shows the financial forecast for the Wastewater System operating budget based on projected operations and maintenance expenses and debt service requirements.

<b>Wastewater System Operating Budget</b> <b>Five-Year Financial Forecast (\$ Millions)</b>							
	Actuals FY18	Budget FY19	Forecast				
			FY20	FY21	FY22	FY23	FY24
<b>Beginning Balance</b>	-	-	<b>103.0</b>	<b>89.4</b>	<b>79.4</b>	<b>89.3</b>	<b>95.3</b>
Treatment Charges	73.1	75.3	77.8	80.9	84.8	88.5	92.3
Resource Recovery	11.8	8.0	10.0	10.0	10.0	10.0	10.0
Wet Weather Facilities Charge	24.3	25.2	27.5	28.5	29.7	30.9	32.2
Property Taxes	5.4	4.9	5.4	5.6	5.7	5.8	6.0
Ad Valorem Bond Levy	1.3	0.0	0.0	0.0	0.0	0.0	0.0
Interest Income	0.9	1.5	2.4	2.1	2.1	2.3	2.4
Laboratory Services	4.4	4.3	4.4	4.5	4.7	4.8	4.9
Reimbursements	1.3	1.4	1.5	1.5	1.6	1.6	1.7
Permit Fees	1.7	1.6	1.6	1.6	1.6	1.6	1.6
Capacity Charges	11.7	1.9	4.0	4.0	4.0	4.0	4.0
All Other Revenue	5.9	5.7	5.7	5.7	5.7	5.7	5.7
<b>Operating Revenues Total</b>	<b>141.8</b>	<b>129.9</b>	<b>140.2</b>	<b>144.4</b>	<b>149.8</b>	<b>155.2</b>	<b>160.7</b>
Revenue Funded Capital	20.9	25.8	48.5	46.0	27.4	32.5	33.0
Operations	67.0	73.1	75.1	78.6	81.6	84.8	88.1
Debt Service	33.2	31.9	30.2	29.8	30.9	31.9	32.9
<b>Expenses Total</b>	<b>121.2</b>	<b>130.9</b>	<b>153.8</b>	<b>154.4</b>	<b>139.9</b>	<b>149.2</b>	<b>154.1</b>
<b>Ending Balance</b>	-	-	<b>89.4</b>	<b>79.4</b>	<b>89.3</b>	<b>95.3</b>	<b>102.0</b>
Policy Reserves	-	-	44.9	45.8	46.5	47.3	48.1

The following table shows the key assumptions used to create the revenue forecast.

<b>Wastewater System Key Assumptions</b> <b>Five-Year Financial Forecast</b>							
	Actuals FY18	Budget FY19	Forecast				
			FY20	FY21	FY22	FY23	FY24
% Rate Increase	5.0%	5.0%	4.0%	4.0%	4.0%	4.0%	4.0%
Average monthly single family residential bill based on 6 ccf/month	\$20.89	\$21.95	\$22.15	\$23.02	\$23.94	\$24.90	\$25.89
Debt Service Coverage Ratio	2.65	1.81	2.34	2.40	2.40	2.39	2.39

Excludes Wet Weather Facilities Charge

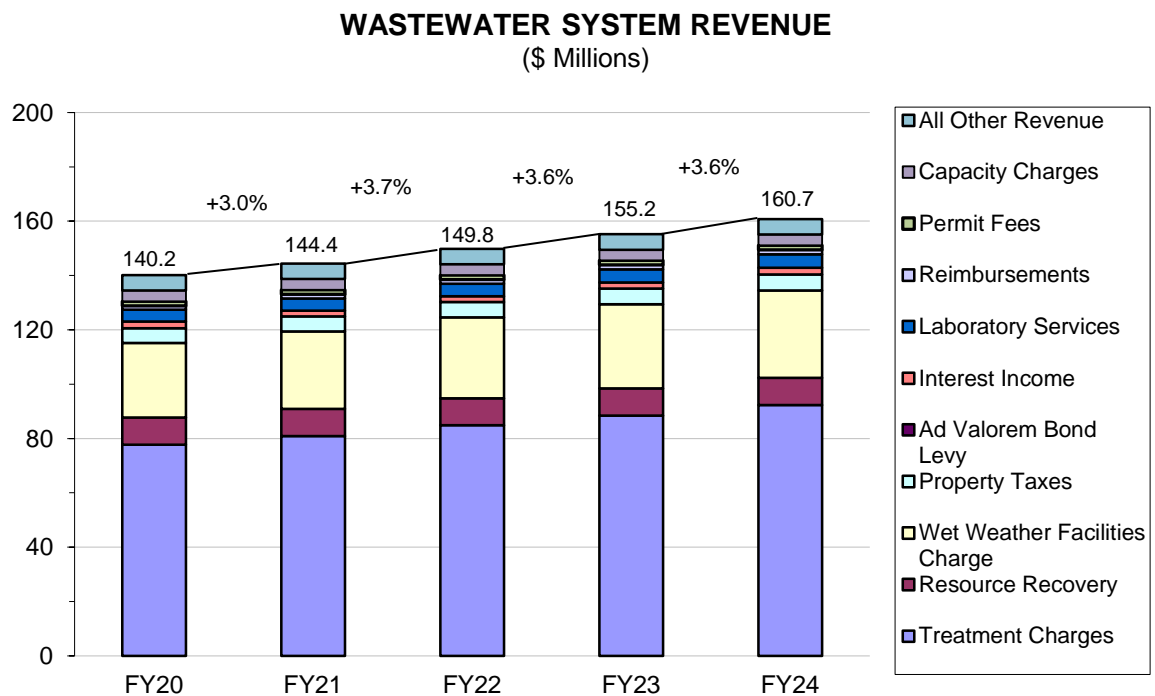
## Five-Year Projection of Revenue

The key factors driving the need for increased Wastewater System revenues are: increasing labor and benefit costs, inflation on non-labor products and services, projected reductions in treatment revenue due to lower customer water use, and increasing capital expenditures.

Projected annual operating revenues are expected to increase from \$140.2 million in FY20 to \$160.7 million by FY24, an increase of \$20.5 million or 3.5 percent per year. The increase in revenue over the five-year period is to cover increased costs in operations and maintenance, debt service requirements, and revenue funding for capital projects.

The major components of the increases in operating revenue over the five-year period are Treatment Charges which are projected to increase from \$77.8 million in FY20 to \$92.3 million in FY24 and increases in revenue from the Wet Weather Facilities Charge from \$27.5 million in FY20 to \$32.2 million in FY24.

The following chart shows projected Wastewater System operating revenue by category for the next five years.



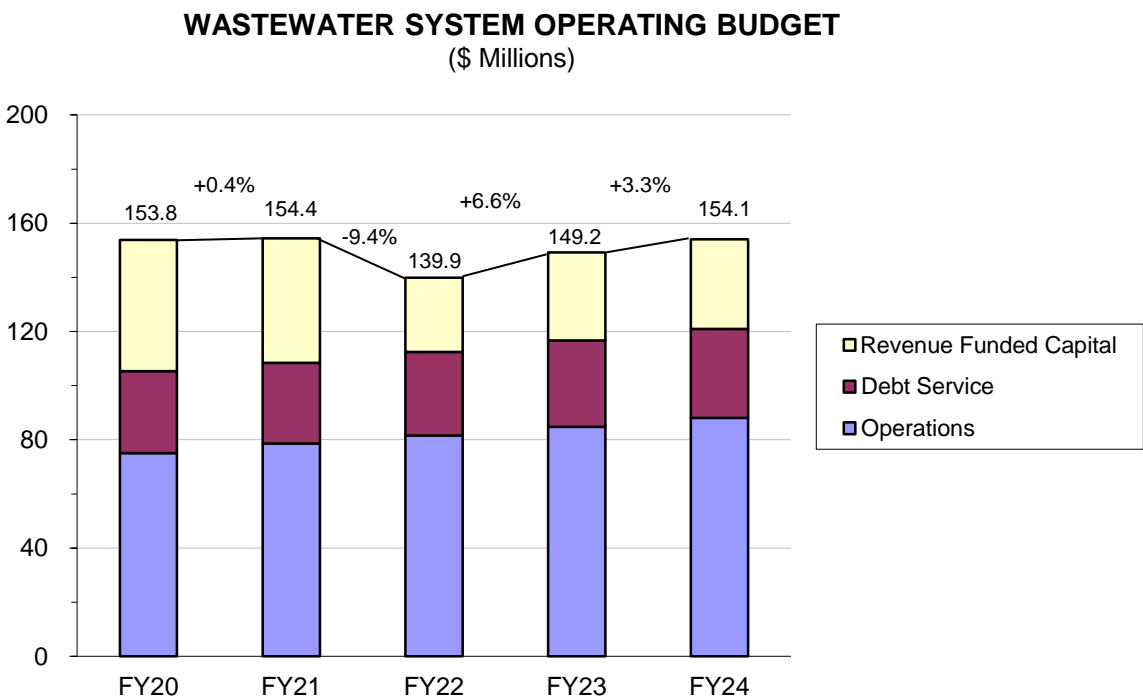
# Five-Year Projection of Operating Budget

The Wastewater System operations expenses are projected to increase from \$75.1 million in FY20 to \$88.1 million in FY24, an increase of 4.1 percent per year.

Debt service requirements are projected to increase from \$30.2 million in FY20 to \$32.9 million by FY24, an increase of 2.2 percent per year.

The District uses rate revenue to cash fund a portion of the annual capital improvement expenses. The amount of revenue funded capital decreases over the five-year period from \$48.5 million in FY20 to \$33.0 million in FY24, a decrease of 9.2 percent per year.

This chart summarizes projected Wastewater System budget by category for the next five years.



## Five-Year Projection of Reserves

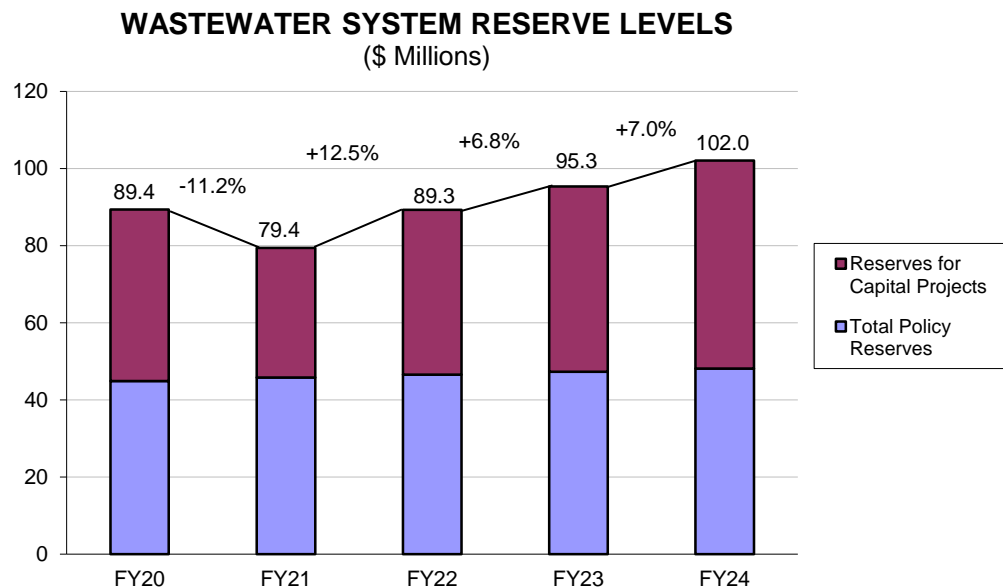
The operating reserves consist of:

- Working capital reserves equal to three months operating and maintenance expenses
- Self-Insured Liability reserve based on the actuarial Self-Insured Retention (SIR) funding recommendation
- Workers' Compensation reserve based on the actuarial SIR funding recommendation
- Rate stabilization reserve of a minimum of 5 percent of operating and maintenance expenses

The table below shows the changes to reserve components over the five-year period. Reserve balances meet or exceed the policy reserve levels for the entire period.

<b>Wastewater System Reserve Components</b> (\$ Millions)					
	<b>Forecast</b>				
	<b>FY20</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>
<b>Projected Operating Budget Reserves</b>	<b>89.4</b>	<b>79.4</b>	<b>89.3</b>	<b>95.3</b>	<b>102.0</b>
<b>Policy Reserves</b>					
Working Capital	18.8	19.6	20.4	21.2	22.0
Self-Insured Liability Reserve	1.1	1.1	1.1	1.1	1.1
Workers' Compensation Reserves	0.9	0.9	0.9	0.9	0.9
Rate Stabilization Reserve	24.1	24.1	24.1	24.1	24.1
<b>Total Policy Reserves</b>	<b>44.9</b>	<b>45.8</b>	<b>46.5</b>	<b>47.3</b>	<b>48.1</b>
<b>Reserves Available for Capital Projects</b>	<b>44.5</b>	<b>33.6</b>	<b>42.8</b>	<b>48.0</b>	<b>53.9</b>

The following chart shows Wastewater System reserve levels projected at the end of each fiscal year.



## **CAPITAL INVESTMENTS AND FINANCING**

The Five-Year CIP outlines the Wastewater System capital investment plan for the next five-year period, the estimated cost of these investments and the sources of funds. Appropriations reflect the amount that is authorized and budgeted over a multi-year period for each program. Cash flows are the amounts estimated to be spent on each program in a given year. The five-year program for the Wastewater System includes \$286.2 million in capital project appropriations, including administration of capital expenses, and \$234.5 million in projected cash flow spending.

The focus of the CIP is the five-year period from FY20-24. Capital needs have been estimated for a second five-year period from FY25-29, but given the long-term nature of these capital improvement plans, by necessity they are preliminary estimates only and will be revised as studies are completed, priorities are redefined, and as new needs emerge. Therefore, the budget focuses on the first five years of the CIP.

Funding for these projects is drawn from the proceeds of revenue bond issues, commercial paper, grants, and current reserves and revenues.

For the FY20-24 CIP, an increasing amount of capital expenditures will be funded on a pay-as-you-go basis in accordance with the District's financial policies. Over the five-year period, the percentage of capital funded from debt will average 20.1 percent, less than the target maximum of 65 percent contained in the District's debt policy, and debt service will increase \$2.7 million as additional revenue bonds are issued. Wastewater System total outstanding debt will decrease \$0.5 million during the period. Total debt outstanding at the end of the five-year period will total \$358.3 million.

In FY20 and FY21, the debt coverage ratio is projected at 2.34 and 2.40, respectively, and for FY22 through FY24, the ratio exceeds the target coverage ratio of 1.60.



The following table shows the cash flow spending on capital improvements anticipated for the next five years, along with the financial resources anticipated to fund the capital program.

<b>Wastewater System Capital Budget Five-Year Financial Forecast (\$ Millions)</b>						
	<b>Forecast</b>					
	<b>FY20</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>Totals</b>
<b>Beginning Balance</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>-</b>
<b>Resources</b>						
Revenue Funded Capital	48.5	46.0	27.4	32.5	33.0	187.4
New Bond Proceeds	0.0	0.0	15.7	15.7	15.7	47.0
Loans Proceeds	-	-	-	-	-	-
Grants	-	-	-	-	-	-
Reimbursements	-	-	-	-	-	-
Commercial Paper	-	-	-	-	-	-
<b>Total Resources</b>	<b>48.5</b>	<b>46.0</b>	<b>43.1</b>	<b>48.2</b>	<b>48.7</b>	<b>234.5</b>
<b>Expenditures</b>						
Capital Cash Flow	45.5	43.0	40.0	45.0	45.4	218.9
Administration of Capital	3.0	3.0	3.1	3.2	3.3	15.6
<b>Total Expenditures</b>	<b>48.5</b>	<b>46.0</b>	<b>43.1</b>	<b>48.2</b>	<b>48.7</b>	<b>234.5</b>
<b>Ending Balance</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>-</b>
<b>Debt Percentage of Funding</b>	<b>0.0%</b>	<b>0.0%</b>	<b>36.4%</b>	<b>32.6%</b>	<b>32.2%</b>	<b>20.1%</b>

Projected new bond issues, outstanding debt, and debt service are shown in the following table.

<b>Outstanding Debt and Debt Service at End of Fiscal Year (\$ Millions)</b>					
	<b>Forecast</b>				
	<b>FY20</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>
Beginning of Year Outstanding Debt	369.7	358.8	347.9	352.2	355.7
Debt Retired	10.9	11.0	11.7	12.5	13.3
New Bond Issues and Commercial Paper	-	-	16.0	16.0	16.0
<b>Total Outstanding Debt</b>	<b>358.8</b>	<b>347.9</b>	<b>352.2</b>	<b>355.7</b>	<b>358.3</b>
Debt Service, Existing Debt	29.7	29.3	29.3	29.3	29.2
Debt Service, New Debt	0.0	0.0	1.0	2.1	3.1
Debt Servicing Costs	0.5	0.5	0.5	0.5	0.6
<b>Total Debt Service</b>	<b>30.2</b>	<b>29.8</b>	<b>30.9</b>	<b>31.9</b>	<b>32.9</b>

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# Proposed Biennial Budget

*Fiscal Years 2020 & 2021*

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***Supplemental Material***

***Capital Project Summaries***



***East Bay Municipal Utility District  
Oakland, California***



# ***Fiscal Years 2020 & 2021***

## **Proposed Biennial Budget**

***Volume 1***      *District Overview*  
*Water System Budget*  
*Wastewater System Budget*

***Volume 2***      ***Supplemental Material:***  
***Capital Project Summaries***

*Presented to the Board of Directors*  
*March 26, 2019*

***East Bay Municipal Utility District***

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## FY20-24 CAPITAL PROJECTS SUMMARY

This chapter contains a Project Summary for each project that has work planned in FY20-24, and an alphabetical project listing.

- **Project Summary**

The project summaries are presented in alphabetical order first by Lead Department and then by Project, and provide a description of the project including recent accomplishments and future plans, as well as previously adopted and planned appropriations.

- **Project Index**

The projects are listed in alphabetical order by title to facilitate looking up a Project Summary.

- **Department Abbreviations**

The abbreviation for the Lead Department responsible for each capital project is as follows:

CUS – Customer and Community Services Department  
ENG – Engineering Department  
FIN – Finance Department  
ISD – Information Systems Department  
MCD – Maintenance & Construction Department  
NRD – Natural Resources Department  
OSD – Operations & Maintenance Support Department  
WAS – Wastewater Department  
WOD – Water Operations Department  
WRD – Water Resources Department  
WRP – Water Recycling Program

- **Recurring Projects**

Projects that perform similar work each year are considered recurring projects, such as Meter Replacements. For recurring projects only the FY20-24 appropriations are shown on the Project Summary page since such projects do not have a definitive total project cost.

- **Funding Sources**

Funding for the CIP is drawn from multiple sources, the abbreviation for the sources is as follows:

APPL – Applicant  
BOND/REV – Bond or Revenue  
ERF – Equipment Replacement Fund  
GRANTS – Grants  
OAG – Other Agencies  
SCC – System Capacity Charges  
VRF – Vehicle Replacement Fund

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## Capital Improvement Program - Project Summary

**Project:** Water Conservation Project

**Project Number:** 000894

**Strategy:** Water Supply

**Program:** Water Conservation

**Justification:**

Demand management is a key component of District water management policy to promote the efficient use of our limited water supply. Participation in District indoor and outdoor conservation services, water use and leak detection surveys, and education programs continue, however, at lower levels than experienced during the water shortage.

**Description:**

In 2016, the District adopted an updated 2015 Urban Water Management Plan that includes water conservation programs designed to reduce potable water demand by a cumulative 62 million gallons per day (MGD) by the year 2040. Water Conservation Program estimated savings through FY2018 total 36 MGD (or 58%) of the 2040 goal. FY2018 demand reflects savings above the 62 MGD goal and efforts are underway to lock in cost-effective conservation savings to meet District and State long-term conservation targets.

Overall conservation savings have been higher than long-term annual averages due to District and State mandated drought water use reductions, increased water efficiency behavior, and heightened interest in water efficient technologies and practices to address local needs and climate change.

Going forward, District conservation services will continue a move away from product rebates toward customer water use management services, including outdoor landscape water budgets, web and mobile self-service tools, customized and on-bill financing incentives, and conservation research. Other areas of focus include water loss control programs and advanced metering infrastructure.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Conservation Incentives	32,956,016	2,387,741	2,886,164	38,229,921
Water Management Services	14,187,123	3,338,595	4,326,045	21,851,763
Research and Development	8,459,433	1,906,195	2,304,110	12,669,738
Education and Outreach	5,997,242	977,980	1,182,119	8,157,341
Regulation and Legislation	959,977	640,892	774,680	2,375,549
Supply-Side Conservation	1,337,500	251,326	303,791	1,892,617

Appropriations:		Lead Dept: CUS	
Prior Years	-	Recurring: Yes	
2020	\$ 1,523,629	Funding:	BOND/REV 89%
2021	\$ 1,886,004		GRANTS 1%
2022	\$ 1,956,735		OAG 10%
2023	\$ 2,030,117		
2024	\$ 2,106,244		
Future Years	-	In Service Date: Recurring	
<b>Total Cost</b>	<b>-</b>		

## Capital Improvement Program - Project Summary

**Project:** Adm Bldg Modifications

**Project Number:** 003033

**Strategy:** Facilities, Servc and Equip

**Program:** Area Service Center/Bldg Prog

**Justification:**

Systems, equipment and finishes of the Oakland Administration Building are over 25 years old, beyond their useful service life, and result in higher than normal energy consumption and operating and maintenance costs. Replacement of building systems with newer technology and design will improve sustainability and reduce costs.

**Description:**

The Oakland Administration Building opened in 1991. Upgrade of building systems and equipment serves to maintain safe work spaces, reduce operating and maintenance costs, and minimize energy use and carbon footprint.

In FY18-19, design was completed and construction began on upgrades to the building's eight elevators and HVAC, lighting and emergency power systems. Design began on improvements to roofing systems on floors 4, 8, 9, and 10 and on upgrade of the building facade access system used for maintenance of exterior pre-cast concrete panels, sealant and glazing.

FY20-24 work includes completion of construction of upgrades to elevators, HVAC, lighting and uninterruptible power supply systems; design and installation of improvements to the building facade access system; replacement of roofing systems on the terraces; design of improvements to the electrical systems including power and data facilities; and replacement of excessively worn building finishes.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
AB HVAC Systems Upgrade	18,723,365	0	0	18,723,365
Roofing Systems Improvements	5,409,000	1,023,050	0	6,432,050
Adm Bldg Carpet Replacement	2,086,536	1,823,000	0	3,909,536
Elevator Upgrades	3,395,238	0	0	3,395,238
AB Electrical Systems Upgrade	0	2,966,000	0	2,966,000
Space Plng & Reconfiguration	450,000	847,606	0	1,297,606
Building Envelope Sealing	83,372	0	1,120,000	1,203,372
A/V System Upgrades	100,000	367,000	0	467,000

Appropriations:		Lead Dept: ENG	
Prior Years	\$ 43,024,146	Recurring: No	
2020	\$ 3,222,606	Funding: BOND/REV 100%	
2021	\$ 1,203,050		
2022	\$ 180,000		
2023	\$ 1,874,000		
2024	\$ 595,000		
Future Years	\$ 1,120,000	In Service Date: 30-Jun-27	
<b>Total Cost</b>	<b>\$ 51,218,802</b>		

## Capital Improvement Program - Project Summary

**Project:** Almond/Fire Trail PZI

**Project Number:** 2003431

**Strategy:** Extensions and Improvements

**Program:** Pressure Zone Improvements

**Justification:**

This project is needed to replace aging infrastructure, improve operating efficiency and reliability, and improve water quality in the Almond Pressure Zone by removing excess storage that is causing low reservoir turnover. The project will improve the level of service and reduce operating and maintenance costs.

**Description:**

This project includes replacing the 6.6 million gallon (MG) open-cut Almond Reservoir with two 1.8 MG reservoirs, demolishing the 3.1 MG Cull Creek Reservoir, installing a new regulator/rate control station, retrofitting the Almond Rate Control Station and rehabilitating the Fire Trail Pumping Plant and replacing the Proctor Pumping Plant which will be implemented under the Pumping Plant Rehabilitation Program. The open-cut Almond Reservoir has structural issues, roof leakage that compromises the integrity of the reservoir, and excess storage capacity which contributes to water quality issues.

Facilities planning was completed in FY17 and environmental documentation was completed in FY18. Design of the Fire Trail Pumping Plant was completed in FY19. Design and construction of the new regulator/rate control station is scheduled for FY20-22. Design for the two 1.8 MG reservoirs is scheduled for FY26-27 followed by construction in FY28-30.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Almond Reservoir Replacement	15,372,000	0	21,131,000	36,503,000

Appropriations:			
Prior Years	\$ 16,060,000	Lead Dept:	ENG
2020	\$ 0	Recurring:	No
2021	\$ 0	Funding:	BOND/REV100%
2022	\$ 0		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 21,131,000		
Total Cost	\$ 37,191,000		

## Capital Improvement Program - Project Summary

**Project:** Aqueduct Cathodic Protection

**Project Number:** 001210

**Strategy:** Maintaining Infrastructure

**Program:** Corrosion

**Justification:**

Cathodic protection along the aqueducts will enhance the reliability of the raw water delivery system. Cathodic protection systems lessen aqueduct outages due to leaks by reducing external corrosion of the steel pipelines. The District has maintained cathodic protection for Aqueduct No. 1 since 1934.

**Description:**

This is an ongoing project that includes annual investigations and periodic renewal of a portion of the Mokelumne Aqueducts' 44 cathodic protection systems (CPSs). These systems prevent corrosion of steel pipelines that come in contact with soil. A CPS requires periodic replacement of expendable components, such as anode beds and power supplies.

FY19 work included improvements at the Bixler, Fairview, Port Chicago, Port Chicago West, Arnold Industrial and Monument CPS locations.

FY20-29 work includes designing and installing remote monitoring systems for the 44 CPS locations on the Mokelumne Aqueduct.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Aqueduct Cathodic Protection	3,392,000	2,027,000	3,652,000	9,071,000

Appropriations:		Lead Dept: ENG	
Prior Years	\$ 3,392,000	Recurring: No	
2020	\$ 62,000	Funding: BOND/REV 100%	
2021	\$ 464,000		
2022	\$ 482,000		
2023	\$ 500,000		
2024	\$ 519,000		
Future Years	\$ 3,652,000	In Service Date: 30-Jun-30	
<b>Total Cost</b>	<b>\$ 9,071,000</b>		

### Capital Improvement Program - Project Summary

**Project:** Bryant PZ Improvement Projects

**Project Number:** 2012090

**Strategy:** Extensions and Improvements

**Program:** Pressure Zone Improvements

**Justification:**

The project is needed to improve water transmission and pumping and to prepare the Bryant Pressure Zone to meet future projected demands through 2040.

**Description:**

The Bryant Pressure Zone improvements include upsizing the Los Altos Pumping Plant (PP) from 10 million gallons per day (MGD) to 16 MGD and upsizing approximately 1.4 miles of 16-inch pipeline with 24-inch pipeline from Los Altos PP to Los Altos Reservoir, upsizing the Castle Hill PP from 2.7 MGD to 5.0 MGD, and upsizing Bryant PPs from 23.8 MGD to 28 MGD, located in Orinda, Lafayette and Walnut Creek respectively.

A facilities improvement plan was completed in FY19. Planning (including environmental documentation), design, and construction of the Los Altos PP and pipeline and Castle Hill PP are scheduled for FY23-30. Planning (including environmental documentation), design, and construction of the Bryant PPs is scheduled to begin in FY29.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Bryant PPs	0	0	28,995,000	28,995,000
Los Altos PP	0	711,000	24,960,000	25,671,000
Castle Hill PP	0	650,000	4,400,000	5,050,000

Appropriations:		Lead Dept: ENG	
Prior Years	\$ 0	Recurring: No	
2020	\$ 0	Funding: BOND/REV 100%	
2021	\$ 0		
2022	\$ 0		
2023	\$ 711,000		
2024	\$ 650,000		
Future Years	\$ 58,355,000	In Service Date: 30-Jun-35	
<b>Total Cost</b>	<b>\$ 59,716,000</b>		

## Capital Improvement Program - Project Summary

**Project:** Buildings Assessment & Improve

**Project Number:** 2003491

**Strategy:** Facilities, Servc and Equip

**Program:** Area Service Center/Bldg Prog

**Justification:**

Improvements under this project promote sustainability, reduce operation and maintenance costs, save energy, reduce carbon footprint, enhance workplace safety, and maintain compliance with codes and regulations.

**Description:**

This project provides a comprehensive approach to upgrades of District occupied facilities. Upgrades are made to meet operational needs, improve energy efficiency and reduce carbon footprint. The project addresses (1) compliance with building codes, zoning ordinances, health and safety regulations and District standards for space utilization; (2) the design and construction of necessary upgrades to building structural, mechanical and electrical systems and equipment; and (3) development of new facilities or expansion of existing facilities.

In FY18-19, design began on upgrade of the lighting and HVAC systems in the Adeline Maintenance Center Administration Building. Construction of Phase 1 of the Fleet Maintenance East Facility was completed. Planning began on site development of a new service yard with additional warehouse and maintenance facilities.

In FY20-25, projects include: construction of Phase 2 of the Fleet Maintenance Facility; development of new service yard space to support operations and maintenance, including Pipeline Rebuild; construction of lighting upgrades, HVAC and controls at the Adeline Maintenance Center Administration Building and providing fall protection and optimizing office space; replacing the fire alarm systems at service centers and Orinda Watershed Headquarters; improvements at Aqueduct facilities maintenance sites; replacing the warehouse roof and providing staff space at Oakport; and improvements to Central Maintenance Services and Castenada Service Center.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Fleet Maintenance East Improve	7,367,000	2,806,133	0	10,173,133
Property Purchases & Improve	9,665,000	0	0	9,665,000
CMS Building Improvmements	120,000	4,911,000	0	5,031,000
Oakport Site Development	0	4,305,225	0	4,305,225
Master Plan Implementation	0	915,000	2,485,000	3,400,000
Aqueduct Facilitie ADA Upgrade	2,717,000	0	0	2,717,000
Oakport Storage Facility Roof	1,545,000	36,269	0	1,581,269
Small Misc. Projects	502,177	950,796	0	1,452,973

Appropriations:		Lead Dept: ENG	
Prior Years	\$ 23,383,836	Recurring:	No
2020	\$ 9,558,429		
2021	\$ 1,247,269	Funding:	BOND/REV 100%
2022	\$ 4,518,000		
2023	\$ 505,000		
2024	\$ 2,270,000		
Future Years	\$ 2,485,000		
Total Cost	\$ 43,967,534	In Service Date: 30-Jun-30	

## Capital Improvement Program - Project Summary

**Project:** CAD/CAM Mapping, Documentation **Project Number:** 000112

**Strategy:** Extensions and Improvements **Program:** Mapping

**Justification:**

This is a recurring project to develop and maintain the Computer-Aided Drafting and Mapping System (CAD/CAM) and Geographic Information System (GIS). These systems are an integral part of the District's information infrastructure which provides data, engineering drawings, and maps required for infrastructure planning, emergency response and maintenance.

**Description:**

This project provides for maintenance and upgrade of the Computer-Aided Drafting and Mapping System (CAD/CAM) and Geographic Information System (GIS), and maintaining and updating distribution system maps and associated data. Mapping and GIS data is used District-wide and by other public agencies. CAD/CAM is also used to create design and construction drawings for all District facilities and distribution system pipelines.

During FY18-19, a major database upgrade was completed, which paved the way for implementation of additional data analysis and field tools, as envisioned in the Geospatial Strategic Plan. In addition, data integrity and database design improvements were made. To support implementation of the Geospatial Strategic Plan, the database will be enhanced to support geographic integrity and the GPS data collection.

In FY20-24 and future years, this project will continue to maintain and improve CAD/CAM and GIS to ensure that these systems remain up to date with current technologies. Implementation of the Geospatial Strategic Plan will continue in FY20 by making additional pipeline information available electronically. The GIS database and desktop software will be upgraded; hardware will be replaced to ensure system integrity and increase productivity; and periodic major software upgrades will be made.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Cad Cam Sys Development	35,481,441	9,791,362	0	45,272,803

Appropriations:			
Prior Years	-	Lead Dept:	ENG
2020	\$ 1,876,622	Recurring:	Yes
2021	\$ 1,870,797	Funding:	BOND/REV 100%
2022	\$ 1,940,952		
2023	\$ 2,013,738		
2024	\$ 2,089,253		
Future Years	-		
Total Cost	-	In Service Date:	Recurring

### Capital Improvement Program - Project Summary

**Project:** Camanche Rec Area Upgrades

**Project Number:** 000153

**Strategy:** Resource Management

**Program:** Recreation Areas

**Justification:**

The Federal Energy Regulatory Commission requires adequate maintenance of recreation facilities. These are the last of the upgrades identified in 1993 to correct the lack of maintenance by the prior concessionaire, and to bring road elevations above the spill elevation of the reservoir.

**Description:**

This project provides campground and road improvements at the Camanche North and South Shore Recreation Areas. Improvements include new picnic tables, fire rings, BBQs and parking spurs at each camp site; rehabilitation of main and campground roads; and new signage and striping for traffic control. Design for the South Shore campground improvements and day use roads has been initiated, and the project will be completed in FY20.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Cam Rec Area SS Camp & Dayuse	770,000	0	0	770,000

Appropriations:			
Prior Years	\$ 6,176,000	Lead Dept:	ENG
2020	\$ 0	Recurring:	No
2021	\$ 0	Funding:	BOND/REV100%
2022	\$ 0		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 0		
Total Cost	\$ 6,176,000	In Service Date:	30-Jun-20



## Capital Improvement Program - Project Summary

**Project:** Cent Oakland Hills Cascade PZI

**Project Number:** 003042

**Strategy:** Extensions and Improvements

**Program:** Pressure Zone Improvements

**Justification:**

This project is needed to replace aging infrastructure, improve water quality, and improve operating efficiency and reliability in the Central Oakland Hills Cascade area by combining and optimizing storage and pumping within several different pressure zones. The projects will improve the level of service and reduce long-term operation and maintenance costs.

**Description:**

The Central Oakland Hills Cascades Pressure Zone (PZ) Improvements are a series of projects within the Oakland Hills, including the 39th Avenue, Dingee, Joaquin Miller, Piedmont, Pinehaven, and Skyline PZs. Projects include replacement of the 39th Avenue Reservoir, Joaquin Miller Pumping Plant (PP), and Piedmont Reservoir, rehabilitation of the Montclair PP, construction of a new Redwood Regulator, transmission system improvements within the Piedmont Pressure Zone, and demolition of the existing Dingee, Oak Knoll, Redwood, and Swainland Reservoirs. The Swainland Reservoir demolition may also include construction of a replacement reservoir or new regulator. Some of the demolition work will be undertaken as part of the Reservoir Rehabilitation Program, and rehabilitation of the Montclair PP will take place under the Pumping Plant Rehabilitation Program.

Projects completed include the demolition of the Hilltop and Pinehaven PPs, demolition of the Pinehaven Reservoirs, and replacement of the Estates Reservoir. In FY19, a facilities plan for the Piedmont PZ was completed to determine the size and timing of new storage at the Piedmont Reservoir site and required transmission improvements within the Piedmont PZ. During the next five years, a planning study for Swainland Reservoir will be completed, site planning for Piedmont Reservoir will be completed, new transmissions system improvements in the Piedmont PZ will be planned and designed, and a new Redwood Regulator will be constructed.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Piedmont Reservoir Replacement	1,425,000	441,000	44,732,433	46,598,433
Joaquin Miller PP Replacement	0	0	18,574,000	18,574,000
Swainland Res and Regulator	3,609,000	0	0	3,609,000
Piedmont PZ Trans Imprv	0	2,866,000	0	2,866,000
Redwood Regulator	0	872,000	0	872,000
Redwood Res Decommission	0	525,000	0	525,000

Appropriations:		Lead Dept: ENG	
Prior Years	\$ 29,674,998	Recurring: No	
2020	\$ 872,000	Funding: BOND/REV 100%	
2021	\$ 0		
2022	\$ 12,000		
2023	\$ 597,000		
2024	\$ 3,223,000		
Future Years	\$ 81,395,926	In Service Date: 30-Jun-39	
<b>Total Cost</b>	<b>\$ 115,774,924</b>		

## Capital Improvement Program - Project Summary

**Project:** Colorados Pressure Zone Imprv

**Project Number:** 1006294

**Strategy:** Extensions and Improvements

**Program:** Pressure Zone Improvements

**Justification:**

This project is needed to provide additional water storage to meet future demands and increase water transmission capacity between reservoirs in the Colorados Pressure Zone. The project will improve the level of service and reduce long-term operation and maintenance costs.

**Description:**

The Colorados Pressure Zone Improvements (PZI) study provided planning and conceptual design for the Highland Reservoir in Lafayette, Tice Pumping Plant in Walnut Creek, and Withers Pumping Plant in Lafayette as part of the approved Water Treatment and Transmission Improvements Program (WTTIP) Environmental Impact Report.

Highland Reservoir has been completed. Design and construction of Tice Pumping Plant will take place as a separate project, and Withers Pumping Plant is included as part of the WTTIP Distribution Improvements Project.

Design and construction of three additional projects in the Colorados Pressure Zone is scheduled to begin in FY25 and includes: (1) replacement of Diablo Vista Reservoir; (2) 2,700 feet of 16-inch pipeline in Brook Street; and (3) 1,300 feet of 12-inch pipeline in Old Tunnel Road. The size and need for these three projects will be confirmed in FY20 by the Colorados PZI Update Study.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Brook Street Pipeline	0	0	3,113,000	3,113,000
Old Tunnel Rd. Pipeline	597,000	0	208,000	805,000
Colorados PZI Update	266,000	72,000	0	338,000

Appropriations:		Lead Dept: ENG	
Prior Years	\$ 1,018,000	Recurring: No	
2020	\$ 72,000	Funding: BOND/REV 100%	
2021	\$ 0		
2022	\$ 0		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 9,503,000	In Service Date: 30-Jun-37	
<b>Total Cost</b>	<b>\$ 10,593,000</b>		

## Capital Improvement Program - Project Summary

**Project:** Dam Operational Upgrades

**Project Number:** 1002574

**Strategy:** Regulatory Compliance

**Program:** Dam Safety

**Justification:**

Upgrades to dams, spillways, channels, embankment slopes, reservoir linings, drain lines, valves and other features are required by regulatory agencies to safely operate the District's reservoirs and dam facilities.

**Description:**

This project involves making improvements to various dams and reservoirs to allow continued safe operation of the facilities. Accomplishments in FY18-19 included: 1) a comprehensive review of the structural integrity of terminal reservoir spillways; 2) completion of inundation maps for Chabot and USL reservoirs; 3) repairs to the Watson Reservoir lining to mitigate leaks; and 4) inspections of tunnel lining at USL and Lafayette Reservoirs.

Upcoming work includes: 1) sediment removal downstream of USL Reservoir spillway in FY20-21, 2) completion of terminal reservoir inundation maps through FY20 and of open-cut distribution reservoirs through FY21, 3) lining replacement at Watson Reservoir in FY20-21, and 4) tunnel/conduit inspections and repairs at all terminal reservoirs through FY22.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Dam and Spillway Upgrades	2,445,000	300,000	0	2,745,000
Reservoir Tunnel Inspection	2,150,000	0	0	2,150,000
Watson Res Lining Repairs	1,900,000	0	0	1,900,000
Camanche Spillway Evaluation	0	1,600,000	0	1,600,000
Pardee Spillway Evaluation	0	1,600,000	0	1,600,000
Terminal Res Inundation Maps	1,500,000	0	0	1,500,000
Hydrologic/Hydraulic Modeling	466,000	1,013,000	0	1,479,000

Appropriations:		Lead Dept: ENG	
Prior Years	\$ 11,023,000	Recurring: No	
2020	\$ 2,250,000	Funding: BOND/REV 100%	
2021	\$ 0		
2022	\$ 1,013,000		
2023	\$ 1,250,000		
2024	\$ 0		
Future Years	\$ 0	In Service Date: 30-Jun-25	
<b>Total Cost</b>	<b>\$ 15,536,000</b>		

## Capital Improvement Program - Project Summary

**Project:** Dam Seismic Upgrades

**Project Number:** 000861

**Strategy:** Regulatory Compliance

**Program:** Dam Safety

**Justification:**

California Division of Safety of Dams (DSOD) and the District require that embankments are safe to withstand the maximum credible earthquake without an uncontrolled release of reservoir water.

**Description:**

This project includes seismic safety evaluations and dam freeboard increases to improve seismic safety.

Evaluations and/or safety reviews have been completed at all of the District's Dams. A new cycle of review is beginning to account for accumulated changes in seismic evaluation standards and safety requirements, and to respond to portions of the 2017 FERC 12D Potential Failure Mode Analysis and Independent Consultant Safety Inspection.

Major seismic upgrades at Chabot Dam in San Leandro were completed in FY18, with additional seismic upgrades completed in previous years at Dunsmuir Reservoir in Oakland and San Pablo Clearwell in Kensington. Future seismic upgrades at Camanche Dam are dependent on Federal Energy Regulatory Commission (FERC) review, approval, and subsequent directive, and are currently planned to begin in FY22. Updated seismic reviews using current engineering standards are planned for FY20-21 at Danville Reservoir in Danville and at Leland Reservoir in Lafayette.

Dam freeboard has been increased by structural modifications to the spillways at North Dam in Richmond, and Danville Dam in Danville; and by operational modifications at Maloney Dam in Pinole, Moraga Dam in Moraga, San Pablo Clearwell in Kensington and Argyle #2 in El Sobrante.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Chabot Dam Seismic Upgrade	24,026,000	200,000	0	24,226,000
Camanche Dam Seismic Upgrade	7,600,000	0	3,800,000	11,400,000
Pardee Dam and Spillway	526,500	1,250,000	0	1,776,500
Camanche Seismic Design Review	0	465,000	0	465,000
Danville Seismic Stability	0	0	0	0
Leland Seismic Stability Evalu	0	0	0	0

Appropriations:		Lead Dept: ENG	
Prior Years	\$ 39,041,000	Recurring: No	
2020	\$ 1,915,000	Funding: BOND/REV 100%	
2021	\$ 0		
2022	\$ 0		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 3,800,000	In Service Date: 30-Jun-30	
<b>Total Cost</b>	<b>\$ 44,756,000</b>		

## Capital Improvement Program - Project Summary

**Project:** Dam Surveillance Improvements      **Project Number:** 000748

**Strategy:** Regulatory Compliance      **Program:** Dam Safety

**Justification:**

Ongoing dam surveillance is required per the District's Dam Safety Program and per California Division of Safety of Dams (DSOD) and Federal Energy Regulatory Commission (FERC) permit requirements. Dam instrumentation must be upgraded and replaced as needed to provide early warning of potential safety issues.

**Description:**

The District regularly monitors the performance and safety of its dams with routine inspections and measurements using over 2,000 instruments, including piezometers to measure water levels below the dam, seepage weirs and relief wells to measure flow through the dam and foundation, survey instruments and markers to measure dam settlement and displacement, load cells to measure spillway crest tie-down loads, and seismographs to measure earthquake ground motions.

In recent years, the District installed seismographs at Pardee and Camanche Reservoirs; constructed seepage monitoring devices at multiple open-cut reservoirs; upgraded the collection and monitoring systems at the Camanche Dike 2 relief wells; completed the automated GPS topographic survey systems at Pardee and Camanche Dams; and replaced vibrating wire piezometer equipment.

In FY20-24, proposed work includes: 1) flush and clean the Camanche Main Dam relief wells; 2) evaluate and re-tension the tie-down anchors on the Pardee concrete spillway; 3) install seismographs at Lafayette Reservoir; 4) design and install a pilot automated GPS survey system at San Pablo Reservoir to evaluate its potential for future use at Briones, Chabot, Lafayette, and Upper San Leandro Reservoirs; 5) continue to operate and maintain the automated GPS survey system at Camanche and Pardee Dams; and 6) replace, repair, or add new instruments as necessary to maintain effective dam safety surveillance.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
GIS-Based Dam Monitoring	300,000	2,000,000	0	2,300,000
Pardee Camanche Survey Imprvts	2,125,000	170,000	0	2,295,000
Terminal Reservoir Survey Impr	0	1,900,000	0	1,900,000
Dam Instrumentation Upgrades	1,315,000	400,000	0	1,715,000
Pardee Camanche Instruments	903,000	600,000	0	1,503,000
Terminal Res Seismographs	758,000	0	0	758,000
Open-Cut Res Underdrain Instru	688,000	0	0	688,000

Appropriations:		Lead Dept: ENG	
Prior Years	\$ 8,063,322	Recurring: No	
2020	\$ 4,170,000	Funding: BOND/REV 100%	
2021	\$ 900,000		
2022	\$ 0		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 0	In Service Date: 30-Jun-25	
<b>Total Cost</b>	<b>\$ 13,133,322</b>		

Capital Improvement Program - Project Summary				
<b>Project:</b> Diablo PZ Improvements		<b>Project Number:</b> 000482		
<b>Strategy:</b> Extensions and Improvements		<b>Program:</b> WC-SRV In Zone Improvements		
<b>Justification:</b> This project is needed to address storage and level of service deficiencies, which include low pressure problems in the Diablo Pressure Zone. The project will restore operating storage to District standards, eliminate temporary facilities, and is a required mitigation for the future Emmons Reservoir outage.				
<b>Description:</b> This project includes design and construction of a replacement 3.1-million-gallon (MG) welded-steel reservoir with a deep pier foundation at the same location as the demolished Diablo Reservoir, improvements to the existing access road, and site restoration. Design is scheduled for FY27-28 followed by construction in FY29-30.				

## Capital Improvement Program - Project Summary

**Project:** Dist Sys Corrosion Protection

**Project Number:** 000711

**Strategy:** Maintaining Infrastructure

**Program:** Corrosion

**Justification:**

The project is needed to reduce maintenance costs and extend the useful life of the District's water mains through the ongoing upgrade of cathodic protection systems.

**Description:**

This is an ongoing project to repair or replace cathodic protection units for distribution water mains. The distribution system is protected by approximately 1,300 galvanic anode units, which total 3,000 individual anodes, plus approximately 84 impressed current units. Approximately 20 galvanic anode units require replacement each year. Most impressed current units will require repair or replacement to meet minimum electrical safety standards and will require the installation of new anode groundbeds.

In FY20-29, work includes repair of 20 galvanic anode units per year, repair or replacement of 10 impressed current units, and start of the Copper Lateral Cathodic Protection Program to install 8,000 anodes per year for 20 years.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Copper Laterals CP Project	0	19,633,000	37,957,000	57,590,000
Distr System Corrosion Protect	12,049,000	819,000	1,205,000	14,073,000
Impressed Current Stations	0	3,200,000	4,707,000	7,907,000

Appropriations:			
Prior Years	\$ 12,049,000	Lead Dept:	ENG
2020	\$ 4,771,000	Recurring:	No
2021	\$ 1,824,000	Funding:	BOND/REV 100%
2022	\$ 4,459,000		
2023	\$ 6,183,000		
2024	\$ 6,415,000		
Future Years	\$ 43,869,000		
Total Cost	\$ 79,570,000	In Service Date:	30-Jun-30

## Capital Improvement Program - Project Summary

**Project:** Distribution System Upgrades

**Project Number:** 000130

**Strategy:** Extensions and Improvements

**Program:** Pressure Zone Improvements

**Justification:**

Various project elements are needed to restore customer levels of service or improve distribution system redundancy and capacity. Work is prioritized annually based on level of service and operating efficiency.

**Description:**

This is an ongoing project that focuses on the distribution system where operational issues are identified or customer complaints are received and verified. The project reviews and prioritizes pipeline and related system improvements, including storage level optimization for water age.

In FY18-19, the Water Bottle Filling Station Pilot Program and two pressure zone rezonings were completed. Planned projects for FY20-24 include additional rezonings and related pipeline system improvements, valve improvements for storage cycling optimization, and rezoning the Hill Mutual Pressure Zone (PZ) into the Holly PZ by installing approximately 1,700 feet of 12-inch pipeline.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
New Pressure Zone Studies	2,508,536	750,000	0	3,258,536
Hill Mutual PZ Rezoning	956,000	1,159,000	0	2,115,000
PZ Rezonings	880,000	1,000,000	0	1,880,000
Dual Tank Isolation Valves	366,000	848,000	0	1,214,000
Cultural Resources	500,000	0	0	500,000

Appropriations:		Lead Dept: ENG	
Prior Years	\$ 7,065,808	Recurring: No	
2020	\$ 1,509,000	Funding: BOND/REV 100%	
2021	\$ 552,000		
2022	\$ 558,000		
2023	\$ 565,000		
2024	\$ 573,000		
Future Years	\$ 0	In Service Date: 30-Jun-35	
<b>Total Cost</b>	<b>\$ 10,822,808</b>		



### Capital Improvement Program - Project Summary

**Project:** East Area Service Center

**Project Number:** 000150

**Strategy:** Facilities, Servc and Equip

**Program:** Area Service Center/Bldg Prog

**Justification:**

The existing service center building was originally constructed in 1962, and replaced in FY11. The proposed electrical power improvements to the HVAC, power and lighting systems are critical for emergency response and business continuity operations at the facility.

**Description:**

This project replaced the service center administration and warehouse buildings with a new seismically strengthened office building with approximately 1,700 square feet of new space on a second floor to provides men's and women's accessible restrooms, lockers, showers, and storage.

In FY20-21, design and construction of electrical power improvements to the HVAC, power and lighting systems for emergency response and business continuity operations will be completed.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Main Switchgear and Generator	600,000	0	0	600,000
HVAC System upgrade	0	543,000	0	543,000

Appropriations:		Lead Dept: ENG	
Prior Years	\$ 9,440,248	Recurring: No	
2020	\$ 543,000	Funding: BOND/REV 100%	
2021	\$ 0		
2022	\$ 0		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 0	In Service Date: 31-Dec-22	
<b>Total Cost</b>	<b>\$ 9,983,248</b>		

## Capital Improvement Program - Project Summary

**Project:** Electrical Hazard Prevention

**Project Number:** 2001485

**Strategy:** Maintaining Infrastructure

**Program:** Electrical Hazard Prevent Pgm

**Justification:**

The District must comply with the Occupational Safety and Health Administration (OSHA) standard for electrical safety in the workplace. The standard involves identifying and analyzing electrical hazards, educating the workforce on those hazards, and implementing safeguards to protect the workers.

**Description:**

An arc flash evaluation of each facility will assess and mitigate the potential for electrical hazards to personnel working on and around electrical power distribution equipment. Arc flash evaluations for Pumping Plants Phase 1 through 6, Water Treatment Plants Phase 1 and 2, Hydroelectric Plants Phase 1, Administration Building Phase 1 and 2, and Arc Flash Review Phase 1 have been completed.

Remaining work consists of arc flash studies for 12 miscellaneous pumping plants and five service areas in FY19; 10 miscellaneous buildings in FY20-FY21; and miscellaneous facilities at Bixler, Stockton, Walnut Creek, and cathodic stations in FY22-FY25.

In addition, arc flash studies are required to be reviewed every five years by OSHA. In FY20, studies completed prior to FY15 will be reviewed.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Arc Flash 5 Year Review	681,000	829,000	0	1,510,000
Miscellaneous Facilities	0	452,000	161,000	613,000
Admin Buildings Arc Flash Eval	206,000	313,000	0	519,000

Appropriations:			
Prior Years	\$ 2,676,000	Lead Dept:	ENG
2020	\$ 145,000	Recurring:	No
2021	\$ 315,000	Funding:	BOND/REV 100%
2022	\$ 383,000		
2023	\$ 344,000		
2024	\$ 407,000		
Future Years	\$ 161,000		
Total Cost	\$ 4,431,000	In Service Date:	30-Jun-25

## Capital Improvement Program - Project Summary

**Project:** Encinal Cascade PZI

**Project Number:** 2009581

**Strategy:** Extensions and Improvements

**Program:** Pressure Zone Improvements

**Justification:**

The projects are needed to replace and/or eliminate aging infrastructure, improve water quality and low pressure issues, and improve operating efficiency and reliability in the Encinal Cascade Pressure Zones which have excess storage capacity causing low reservoir turnover. The projects will improve level of service and reduce long-term operation and maintenance costs.

**Description:**

The Encinal Cascade Pressure Zone (PZ) improvements address high-priority pumping plant and reservoir rehabilitation and replacement projects in the Infrastructure Rehabilitation Program within the Encinal, Westside and Dos Osos PZs located in Orinda. Encinal PZ improvements include construction of a new Encinal Regulator and demolition of Encinal PP and Encinal Reservoir to make Encinal PZ a fully-regulated PZ. Westside PZ improvements include relocation of Westside PP to the existing Encinal PP site (with the new Encinal Regulator housed within the new PP) and construction of approximately 7,000 feet of 12-inch pipelines. Dos Osos PZ improvements include replacement of Dos Osos Reservoir with dual tanks at a higher elevation and rehabilitation of the Dos Osos PP.

Environmental documentation for the Dos Osos PZ improvements and Encinal PZ and Westside PZ improvements was completed in FY17 and FY19, respectively. Design of the Encinal PZ and Westside PZ improvements will be completed in FY20, with construction taking place in FY20-22. Environmental permitting for the Dos Osos PZ improvements, currently underway, will be completed in FY21. Design of the Dos Osos PZ improvements would occur in FY20-22 followed by construction in FY23-24.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Westside PP Relocation	7,193,674	7,214,475	0	14,408,149
Dos Osos Res Repl and PP Rehab	465,000	8,613,861	0	9,078,861
Enc Res Westsd PP Dem, Enc Reg	848,322	1,205,347	0	2,053,669

Appropriations:			
Prior Years	\$ 8,506,996	Lead Dept:	ENG
2020	\$ 17,033,683	Recurring:	No
2021	\$ 0	Funding:	BOND/REV 100%
2022	\$ 0		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 0		
Total Cost	\$ 25,540,679	In Service Date:	31-Dec-25

## Capital Improvement Program - Project Summary

**Project:** Enterprise Hyd WQ & Op Modl

**Project Number:** 2005281

**Strategy:** Extensions and Improvements

**Program:** Pressure Zone Improvements

**Justification:**

Implementation of the Enterprise Hydraulic Modeling will improve the efficiency and productivity of hydraulic modeling workflows; optimize hydraulic operations and provide cost savings in water distribution system energy use; and optimize system water quality.

**Description:**

Recent conversion of the enterprise systems (e.g., mapping, water consumption, pipeline risk models) to ArcGIS and advances in commercially available hydraulic modeling software present an opportunity to integrate enterprise systems including Supervisory Control and Data Acquisition (SCADA) and mapping data with the ArcGIS-based hydraulic modeling software (InfoWater). The Enterprise Hydraulic Modeling Project will implement new tools to create, verify, and update enterprise hydraulic models to streamline and improve workflows and infrastructure planning decision making, and optimize water distribution operations for energy and water quality management. The enterprise hydraulic models will also enable data sharing with the pipeline risk model.

In FY18-19, configuration and implementation of SCADAWatch and GIS Gateway were completed to integrate SCADA data and mapping data into hydraulic models. In addition, enterprise hydraulic models were constructed for approximately 40 percent of the distribution system. In FY20-21, the remaining enterprise hydraulic models will be constructed. In FY22-FY24, ongoing administration will be completed to oversee and maintain efficient performance of enterprise hydraulic models and workflows. In FY25-26, IWLIVE will be pilot tested and evaluated for optimizing water distribution operations to reduce energy costs and improve water quality. If tests are successful it will be implemented in FY27-29.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Enterprise Hydraulic Modeling	785,270	889,499	640,381	2,315,150

Appropriations:			
Prior Years	\$ 785,270	Lead Dept:	ENG
2020	\$ 889,499	Recurring:	No
2021	\$ 0	Funding:	BOND/REV 100%
2022	\$ 0		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 640,381		
Total Cost	\$ 2,315,150	In Service Date:	30-Jun-30

Capital Improvement Program - Project Summary					
<b>Project:</b> Hydrants Installed by DF		<b>Project Number:</b> 000099			
<b>Strategy:</b> Maintaining Infrastructure		<b>Program:</b> Pipelines/Appurtenances			
<b>Justification:</b> This project is needed to install hydrants at the request of City and County Fire Districts for new developments including urban in-fill projects, and for District projects.					
<b>Description:</b> This is an ongoing project to install new hydrants in the service area using District forces. Most requests for new hydrants come from fire districts or developers. Development activity has been strong in recent years, with a corresponding increase in the number of hydrants installed. In FY16-17, the District installed an average of 85 new hydrants annually. In FY18-19, work included installation of approximately 90 new hydrants annually. Starting in FY20, the installation rate is planned to increase to 100 hydrants annually in anticipation of favorable development conditions continuing.					
<b>Key Segments &amp; Appropriations</b>		<b>Prior Yrs</b>	<b>FY20-24</b>	<b>Future Yrs</b>	<b>Total</b>
Hydrants Instlld By Dist		22,804,000	10,493,000	7,314,000	40,611,000
<b>Appropriations:</b>		<b>Lead Dept:</b> ENG <b>Recurring:</b> Yes			
Prior Years	-				
2020	\$ 3,397,000	<b>Funding:</b> APPL 38% BOND/REV 25% OAG 37%			
2021	\$ 1,754,000				
2022	\$ 1,767,000				
2023	\$ 1,781,000				
2024	\$ 1,794,000	<b>In Service Date:</b> Recurring			
Future Years	-				
<b>Total Cost</b>	-				

## Capital Improvement Program - Project Summary

**Project:** Large Diameter Pipelines

**Project Number:** 1006298

**Strategy:** Maintaining Infrastructure

**Program:** Pipelines/Regulators

**Justification:**

The replacement of large diameter transmission pipelines is required to maintain infrastructure reliability. These pipelines convey large volumes of water and many distribution pipelines branch off from them. If these pipelines were to fail service would be disrupted and there would be the potential for collateral damage.

**Description:**

Large diameter transmission pipelines form the backbone of the distribution system. This project replaces transmission pipelines that are at risk of failure, performs condition assessments, and develops master plans.

FY18-19 work included: MacArthur/Davenport, International Blvd, and Grand Ave construction; Summit Pressure Zone (PZ) planning completion; Alameda Crossing #1, Estudillo Ave, and Summit PZ design; and D St and East 15th St surveying.

FY20-21 work includes: Estudillo Ave construction completion; Alameda Crossing #1 construction start; Summit PZ Phase 1 construction completion; and D and East 15th St design completion. The Large Diameter Pipeline Master Plan (LDPMP) will be updated, and a condition assessment plan will be developed.

FY22-29 work includes: Summit PZ Phases 2 and 3 construction completion; Berryman South Reservoir Pipeline Improvements completed; D and E. 15th St construction completion; and completion of Alameda Crossings #1, #2, and #3. The LDMP will be updated bi-annually and synchronized with the upcoming budget cycle to confirm the priority of existing projects and identify any new projects.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Lg Diameter Pipeline Replace	125,699,150	109,597,331	33,672,956	268,969,437
Master Planning	822,000	687,909	806,000	2,315,909
Danville PP PL Property Rights	1,010,411	320,589	0	1,331,000

Appropriations:			
Prior Years	\$ 128,479,561	Lead Dept:	ENG
2020	\$ 58,552,604	Recurring:	No
2021	\$ 415,000	Funding:	BOND/REV 100%
2022	\$ 28,680,767		
2023	\$ 22,636,869		
2024	\$ 320,589		
Future Years	\$ 34,478,956		
Total Cost	\$ 273,564,346		

### Capital Improvement Program - Project Summary

<b>Project:</b> Leland Pressure Zone Impr	<b>Project Number:</b> 2001451
<b>Strategy:</b> Extensions and Improvements	<b>Program:</b> Pressure Zone Improvements

**Justification:**

This project is needed to replace aging infrastructure, address seismic stability issues and improve operating efficiency and reliability. The project will improve the level of service and reduce long-term operation and maintenance costs.

**Description:**

This project includes replacement of the 18 million gallon (MG) open-cut Leland Reservoir with two 8-MG concrete tanks in the existing basin and installation of 3,650 feet of 36-inch transmission pipeline located in Lafayette. Leland Reservoir is the major storage serving Lafayette and most of Walnut Creek. An Environmental Impact Report for the project was completed and approved in FY19. Design of the replacement reservoirs and pipeline is scheduled for FY22-23, followed by construction in FY24-26.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Leland Reservoir Upgrade	6,176,000	49,733,279	0	55,909,279

Appropriations:				
Prior Years	\$ 8,121,480	Lead Dept:	ENG	
2020	\$ 0	Recurring:	No	
2021	\$ 0	Funding:	BOND/REV	30%
2022	\$ 49,733,279		SCC	70%
2023	\$ 0			
2024	\$ 0			
Future Years	\$ 0		In Service Date:	31-Dec-26
Total Cost	\$ 57,854,759			

## Capital Improvement Program - Project Summary

**Project:** Maloney PZ Improvements

**Project Number:** 1002575

**Strategy:** Extensions and Improvements

**Program:** Pressure Zone Improvements

**Justification:**

The projects are needed to replace aging infrastructure and address operational and reliability issues including storage capacity, pumping capacity, and distribution system deficiencies. The projects will improve the level of service and reduce long-term operation and maintenance costs.

**Description:**

This project includes a new 3 to 5 million gallon (MG) Selby Reservoir in Crockett; upgrades to the Maloney Pumping Plant (PP) in El Sobrante and Crockett PP in San Pablo to increase the combined pumping capacity by 12.5 MGD; electrical upgrades at Maloney PP and Sobrante Water Treatment Plant (WTP) to address safety, maintenance and back-up power issues at both facilities; and 18,500 feet of 36-inch pipeline to improve transmission capacity from the Crockett PP to the new Selby Reservoir.

In FY18, the Maloney PP outage plan and La Honda Rate Control Station shutdown plan were completed. In FY19, the design of the upgrades to the Maloney PP and electrical upgrades at the Sobrante WTP were completed. Construction of both the Maloney PP and Sobrante WTP improvements commenced in FY19 and are scheduled to be completed in FY22. Planning, design and construction of the Selby Reservoir replacement is scheduled for FY23-27.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Maloney PP Improvements	46,800,000	31,075,000	0	77,875,000
Selby Reservoir Replacement	0	13,983,000	0	13,983,000
Crockett PP Improvements	180,000	7,023,000	0	7,203,000
Maloney PZI Planning Study	709,000	0	0	709,000

Appropriations:				
Prior Years	\$ 47,689,000	Lead Dept:	ENG	
2020	\$ 31,075,000	Recurring:	No	
2021	\$ 0	Funding:	BOND/REV	59%
2022	\$ 0		SCC	41%
2023	\$ 21,006,000			
2024	\$ 0			
Future Years	\$ 0	In Service Date:	30-Jun-33	
Total Cost	\$ 99,770,000			



## Capital Improvement Program - Project Summary

**Project:** Mok Aqu No 2 & 3 Relining Proj

**Project Number:** 2003494

**Strategy:** Water Supply

**Program:** Aqueduct Program

**Justification:**

This project is needed to preserve the integrity of the steel aqueduct pipelines. In areas where the lining has delaminated, the steel pipe wall is corroding, reducing the steel wall thickness. The new lining will prevent internal corrosion. Water quality improvements will reduce water corrosivity and extend the life of the mortar linings.

**Description:**

This project will replace the deteriorated cement mortar lining in Mokelumne Aqueduct No. 2 (MOK2) and No. 3 (MOK3) to protect the steel pipeline from internal corrosion. Inspections of the elevated Delta reach revealed that 10 miles of the lining in MOK2 and MOK3 is in need of replacement. Inspections of MOK2 indicate that 65 miles of the below ground pipeline reaches also needs replacement. Prior to design and construction of new lining, the project will conduct research on lining technologies and materials, perform detailed inspections, and construct raw water treatment facilities to minimize corrosion.

FY20-22 work includes design of the Raw Water Treatment Facilities and inspection of MOK3 lining. Work also includes design research and pilot testing of cement mortar lining mix.

FY22-24 work includes completing design and construction of Phase I of the MOK2 relining. Work also includes completing construction of the Raw Water Treatment Facilities and completing design of the below ground MOK2 relining.

In FY26-30, work includes construction of the MOK2 below ground relining.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Lining Studies & Improvements	11,980,347	20,520,000	0	32,500,347
Mok Aqueduct No. 2 Relining	16,419,000	0	0	16,419,000

Appropriations:			
Prior Years	\$ 30,560,347	Lead Dept:	ENG
2020	\$ 4,350,000	Recurring:	No
2021	\$ 12,650,000	Funding:	BOND/REV100%
2022	\$ 3,520,000		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 0	In Service Date:	30-Jun-33
Total Cost	\$ 51,080,347		

### Capital Improvement Program - Project Summary

**Project:** Mokelumne Aqueduct Recoating

**Project Number:** 2001487

**Strategy:** Water Supply

**Program:** Aqueduct Program

**Justification:**

Recoating the Mokelumne aqueducts protects them from the corrosive Delta environment, prevents deterioration and breaks, and prolongs their useful life.

**Description:**

This project continues the annual removal of lead-based paint and recoating portions of the 10 miles of above ground pipelines of the Mokelumne Aqueducts in the Delta. The work typically takes place during the summer months and includes recoating several over-water areas of the aqueducts.

In FY19, Phase 12 of the recoating was completed.

FY20-22 work includes Phase 13 of the Aqueduct No. 1 recoating project. The scope includes coating approximately sixty gully crossings.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Mokelumne Aqueducts Recoating	23,804,000	1,710,000	0	25,514,000

Appropriations:		Lead Dept: ENG	
Prior Years	\$ 43,315,153	Recurring: No	
2020	\$ 1,710,000	Funding: BOND/REV 100%	
2021	\$ 0		
2022	\$ 0		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 0	In Service Date: 30-Jun-22	
<b>Total Cost</b>	<b>\$ 45,025,153</b>		

### Capital Improvement Program - Project Summary

**Project:** New Service Installations

**Project Number:** 000101

**Strategy:** Maintaining Infrastructure

**Program:** Pipelines/Appurtenances

**Justification:**

New accounts require new service installations to furnish water to developments.

**Description:**

This is an ongoing project to install new services. Services include taps on the main, laterals, and meter sets. The work consists of adding services due to expansion of the system and urban in-fill projects. The work excludes replacement of old services or polybutylene laterals. Recently, District Forces have installed between 300 to 450 new services annually. The need for installing new services is expected to increase as housing trends have elevated demand for new services.

In FY16-17, an average of 450 new services per year were installed. In FY18, 724 services were installed. In FY20-22, work is estimated to be 700 new services per year.

Projecting further, from FY23 and beyond, work is projected to hold steady and include up to 700 new services per year due to the upward trend in development.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
New Svc Installs	198,306,000	99,383,800	95,071,000	392,760,800

Appropriations:			
Prior Years	-	Lead Dept:	ENG
2020	\$ 23,327,000	Recurring:	Yes
2021	\$ 19,014,200	Funding:	APPL100%
2022	\$ 19,014,200		
2023	\$ 19,014,200		
2024	\$ 19,014,200		
Future Years	-		
Total Cost	-	In Service Date:	Recurring

## Capital Improvement Program - Project Summary

**Project:** Open Cut Reservoir Rehab

**Project Number:** 000241

**Strategy:** Maintaining Infrastructure

**Program:** Reservoir Rehab Program

**Justification:**

Open-cut reservoir rehabilitation, replacement, and demolition projects are necessary to remove hazardous materials, reduce maintenance costs, improve safety, and improve water quality by reducing storage in the distribution system.

**Description:**

The Open Cut Reservoir Rehabilitation project includes rehabilitation and replacement of the District's open-cut reservoirs. In FY19, construction for the replacement of South Reservoir in Castro Valley, which included the replacement of a 50 MG open-cut reservoir with a 9 MG concrete tank, was completed. Design for the San Pablo Clearwell replacement project was completed in FY19, and construction will commence in FY20. In addition, planning to replace the District's largest distribution reservoir, Central Reservoir, continued.

Planned work for FY20-24 includes completion of construction of the San Pablo Clearwell replacement project; completion of the planning phase and kickoff of the design phase for the Central Reservoir replacement project; and demolition of Seneca Reservoir. Design and construction of the replacement reservoirs for Central Reservoir are planned beyond FY24.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Central Reservoir Replacement	3,939,402	5,202,000	180,378,000	189,519,402
San Pablo Clearwell Replacemnt	57,240,600	4,735,000	0	61,975,600
Seneca Reservoir Demolition	190,400	5,900,000	0	6,090,400
North Reservoir Replacement	0	0	1,874,000	1,874,000

Appropriations:				
Prior Years	\$ 93,648,402	Lead Dept:	ENG	
2020	\$ 10,635,000	Recurring:	No	
2021	\$ 0	Funding:	BOND/REV	100%
2022	\$ 0			
2023	\$ 5,202,000			
2024	\$ 0			
Future Years	\$ 182,252,000	In Service Date:	30-Jun-30	
Total Cost	\$ 291,737,402			

### Capital Improvement Program - Project Summary

**Project:** Pipeline Infrastruct Renewals

**Project Number:** 000554

**Strategy:** Maintaining Infrastructure

**Program:** Pipelines/Regulators

**Justification:**

Planned replacement of deteriorating pipelines is needed to maintain the reliability of the distribution infrastructure. Replacing portions of the 3,800 miles of distribution system piping on an annual basis mitigates the costs and service disruptions associated with emergency leak repairs.

**Description:**

The Pipeline Infrastructure Renewals Project is focused on the continued replacement and renewal of pipeline in the distribution system, and ramping up replacement and renewal at a rate sufficient to maintain high system reliability. In FY20-21, the Pipeline Rebuild program will continue to evaluate and determine future replacement goals.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Infrastructure Renewals	207,368,556	300,188,000	511,630,998	1,019,187,554
Pipeline Rebuild Program	54,705,638	0	17,475,000	72,180,638
Pipeline Research-Development	4,340,000	1,840,085	2,641,000	8,821,085

Appropriations:			
Prior Years	-	Lead Dept:	ENG
2020	\$ 49,842,000	Recurring:	Yes
2021	\$ 54,280,085	Funding:	BOND/REV 100%
2022	\$ 56,434,000		
2023	\$ 65,563,000		
2024	\$ 75,909,000		
Future Years	-		
Total Cost	-	In Service Date:	Recurring

Capital Improvement Program - Project Summary					
<b>Project:</b> Pipeline Relocations		<b>Project Number:</b> 000108			
<b>Strategy:</b> Maintaining Infrastructure		<b>Program:</b> Pipelines/Regulators			
<b>Justification:</b> The project is needed to relocate distribution system pipelines as required due to various projects by public agencies (cities, counties, Caltrans, BART, etc.) and private applicants.					
<b>Description:</b> This is an ongoing project to relocate pipelines to accommodate projects of other agencies, such as roadway improvements, bridge replacements or rail system expansions. The work is non-discretionary and difficult to forecast since it is dependent on the schedule of other agencies. The District is obligated to bear the cost of pipeline relocations originating from street improvement projects of most cities, while costs for pipeline relocations driven by private applicants and agencies, such as Caltrans and BART, are typically reimbursable.  In FY20-24, anticipated work includes design and construction of approximately 1.5 miles of pipeline relocations per year, which includes 0.5 miles of reimbursable and 1 mile of non-reimbursable work.					
<b>Key Segments &amp; Appropriations</b>		<b>Prior Yrs</b>	<b>FY20-24</b>	<b>Future Yrs</b>	<b>Total</b>
Non Reimbursable		45,730,166	23,043,851	27,701,009	96,475,026
Reimbursable		13,629,127	8,638,730	10,384,615	32,652,472
<b>Appropriations:</b>		<b>Lead Dept:</b> ENG <b>Recurring:</b> Yes			
Prior Years	-				
2020	\$ 5,878,763	<b>Funding:</b> APPL 10% BOND/REV 73% OAG 17%			
2021	\$ 6,099,215				
2022	\$ 6,327,937				
2023	\$ 6,565,235				
2024	\$ 6,811,431				
Future Years	-	<b>In Service Date:</b> Recurring			
<b>Total Cost</b>	-				

## Capital Improvement Program - Project Summary

**Project:** Pipeline System Extensions

**Project Number:** 000104

**Strategy:** Maintaining Infrastructure

**Program:** Pipelines/Regulators

**Justification:**

This project is needed to satisfy the District's obligation to provide service to new customers within the service area.

**Description:**

This is an ongoing project for pipelines to serve new customers via Applicant Extension Agreements. Annual workload is estimated from projections of land development activity and recent trends in water service activity in the District's New Business Office.

In FY16-17, approximately six miles per year of system extensions were installed by applicants and District forces combined (one mile constructed by District forces and five miles installed by applicants), indicating an upward trend from previous years.

In FY18-19, system extension work was anticipated to ramp up to eight miles per year, with 1.5 miles constructed by District forces and 6.5 miles installed by applicants per year. Projecting further, FY20-24 includes approximately eight miles per year of system extensions.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
New Pipeline Installations	62,633,567	33,121,000	56,819,000	152,573,567

Appropriations:			
Prior Years	-	Lead Dept:	ENG
2020	\$ 0	Recurring:	Yes
2021	\$ 0	Funding:	APPL100%
2022	\$ 7,333,000		
2023	\$ 12,672,000		
2024	\$ 13,116,000		
Future Years	-		
Total Cost	-	In Service Date:	Recurring

Capital Improvement Program - Project Summary					
<b>Project:</b> Pipeline System Improvements		<b>Project Number:</b> 000110			
<b>Strategy:</b> Maintaining Infrastructure		<b>Program:</b> Pipelines/Regulators			
<b>Justification:</b> This program is needed to maintain reliable potable water service to customers by improving various components of the distribution system and addressing areas such as water quality, capacity, maintainability, and reliability.					
<b>Description:</b> This is an ongoing project that serves to enhance the water distribution system by improving water quality, system performance, capacity, reliability, and maintainability of the distribution system.  In FY19, work included the design of approximately 1.0 mile of pipeline system improvements in Oakland and Crockett, the design and construction of 0.5 mile of 4-inch main replacements, and the ongoing design and construction of system improvement projects currently underway throughout the District.  In FY20-24, work will include the design and construction of 1.0 mile per year of pipeline system improvements and 0.5 mile per year of 4-inch replacements. Planned work includes pipeline system improvement projects to support the Alcosta Boulevard Rate Control Station Project in San Ramon.					
<b>Key Segments &amp; Appropriations</b>		<b>Prior Yrs</b>	<b>FY20-24</b>	<b>Future Yrs</b>	<b>Total</b>
Maintainability Imprv Projects		8,515,290	14,624,776	19,733,929	42,873,995
4-inch Reliability Imprv		2,170,000	6,542,847	9,619,492	18,332,339
<b>Appropriations:</b>		<b>Lead Dept:</b> ENG <b>Recurring:</b> Yes			
Prior Years	-				
2020	\$ 2,229,948	<b>Funding:</b> BOND/REV 100%			
2021	\$ 3,843,499				
2022	\$ 3,987,631				
2023	\$ 4,314,235				
2024	\$ 6,792,310				
Future Years	-	<b>In Service Date:</b> Recurring			
<b>Total Cost</b>	-				



## Capital Improvement Program - Project Summary

**Project:** Pressure Zone Planning Program      **Project Number:** 001424  
**Strategy:** Extensions and Improvements      **Program:** Pressure Zone Improvements

**Justification:**

The Pressure Zone Planning Program (PZPP) is needed to identify and report current facility and pipeline needs, reduce duplication of effort, and minimize multi-project scheduling conflicts and delays to rehabilitation projects.

**Description:**

The PZPP is a comprehensive District-wide facilities planning effort to support ongoing and future capital projects. A series of individual PZPP studies were completed in prior years to define pressure zone issues, describe conceptual solutions for those issues, identify facility priority and provide planning level cost estimates. These studies formed the basis of the Distribution System Master Plan (DSMP).

An update to the DSMP was completed in FY19 to set distribution system priorities. Also in FY19, a Pumping Plant Criticality Study was completed to determine the relative operational criticality of distribution pumping plants and prioritize improvements including emergency generators and portable pumping plant connections that will be implemented under another reference project. An update of the PZPP is planned as part of the Collaborative and Holistic Pipeline Plan (CHPP) that will be completed in FY20-FY24 and will incorporate recommendations for pipelines and update major facility recommendations in the PZPPs. This program also includes annual detailed planning and hydraulic studies in support of pipeline replacement, reservoir, regulator, and pumping plant rehabilitation programs to meet emerging priorities, and reflect updates to the demand projections based on the 2050 Demand Study. An update to the DSMP will be completed in FY21.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Pressure Zone Planning Studies	2,563,481	1,669,541	803,000	5,036,022

Appropriations:				
Prior Years	\$ 3,680,481	Lead Dept:	ENG	
2020	\$ 1,117,541	Recurring:	No	
2021	\$ 552,000	Funding:	BOND/REV	80%
2022	\$ 0		SCC	20%
2023	\$ 0			
2024	\$ 0			
Future Years	\$ 803,000		In Service Date:	30-Jun-30
Total Cost	\$ 6,153,022			

## Capital Improvement Program - Project Summary

**Project:** Pumping Plant Rehabilitation

**Project Number:** 001252

**Strategy:** Maintaining Infrastructure

**Program:** Pumping Plant Rehabilitation

**Justification:**

This project is needed to upgrade pumping plants to conform to current District standards to ensure efficient, reliable and safe operation.

**Description:**

The Distribution Pumping Plant Infrastructure Rehabilitation Plan (IRP) was updated in 2018. The IRP identifies the highest priority pumping plants (PPs) for rehabilitation, replacement, or demolition. In FY17-18, the District awarded construction contracts for replacement of Skyline, Country Club, Schapiro, Berryman North; and demolition of Road 24 No. 1. PP. In FY19, construction contracts were awarded for Fire Trail, Jensen, University, Maloney, Greenridge, Bayfair, Peralta, and May PPs.

In FY20-24, work includes planning, design and construction at 27 of the District's 130 distribution PPs, including: University, Fire Trail, Jensen #1, Bayfair, Peralta, May, Bryant PP Complex (Bryant No. 1, Bryant No.2, Colorados, and Leland), Hill Mutual, Crest, Ridgewood, San Ramon, Madrone, Palo Seco, Montclair, Summit West, Aqueduct, Berryman, Valory, Quarry, Summit North, Echo Springs, Summit South, and Crockett. Future work will include design and construction of the remaining priority PP rehabilitation projects, as well as any priorities that may arise. Work will also continue on PP Arc Flash Mitigation. Work will begin on power reliability improvements at 24 distribution pumping plants to protect against an extended PG&E outage.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Future PP Rehabs	0	0	47,100,000	47,100,000
SummitSouth,Crockett,EchoSpgs	0	14,368,000	0	14,368,000
Quarry, Summit North, Larkey	0	12,479,000	0	12,479,000
Fire Trail-Jensen #1 PP Rehab	12,037,807	0	0	12,037,807
Summit W, Aqueduct, Berryman W	11,234,000	0	0	11,234,000
Pearl, Welle, Rolph, Stott PPs	0	0	9,078,000	9,078,000
Bayfr,Prlta,Mdrne,PISeco,MayPP	7,855,000	615,000	0	8,470,000
Hill Mutual, Crest, Ridgewood	7,406,000	0	0	7,406,000

Appropriations:		Lead Dept: ENG	
Prior Years	\$ 142,785,039	Recurring: No	
2020	\$ 11,336,000	Funding: BOND/REV 100%	
2021	\$ 0		
2022	\$ 40,000		
2023	\$ 12,479,000		
2024	\$ 16,528,000		
Future Years	\$ 58,133,000	In Service Date: 30-Jun-30	
<b>Total Cost</b>	<b>\$ 241,301,039</b>		

## Capital Improvement Program - Project Summary

**Project:** Rate Control Station Rehab

**Project Number:** 1002590

**Strategy:** Maintaining Infrastructure

**Program:** Pipelines/Regulators

**Justification:**

This project is needed to rehabilitate rate control stations that present safety hazards, corrosion damage, flooding, poor ventilation, and remote-monitoring malfunctions.

**Description:**

The District operates 36 Rate Control Stations (RCSs) with many older than 50 years. Deteriorated structures are replaced, repaired, and/or upgraded; deteriorated mechanical and telemetry equipment is replaced; access safety is improved by the replacement of street manholes and outdated hatches with safer sidewalk hatches; and Occupational Safety and Health Administration-approved ladders and ventilation are installed where required. In addition, this project includes site inspections and evaluations of RCS facilities to prioritize future rehabilitation work.

FY18-19 accomplishments include completing design for the 98th Ave, Oak, and Sequoia RCSs.

FY20-24 planned work includes completing construction of the above RCSs. Design and construction will be initiated for Alcosta, Bollinger, Castro Valley, Church, Dunsmuir, Golf Links, La Honda, Ney, San Luis No. 1, Victoria, and Webster Rate Control Stations. In addition, planning, design and construction will commence for nine other facilities that have not yet been prioritized for rehabilitation work.

Beyond FY24, this project allows for rehabilitating or replacing RCS facilities at an average of three every two years.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Future RCS Rehabs	0	5,690,000	0	5,690,000
Ney, Vctria, Chrch, Golf Links	2,730,000	2,350,000	0	5,080,000
Alcsta, Bolngr, San Luis No 1, Wbstr	0	4,441,000	0	4,441,000
Oak, 98Av, Sequoia RCS Rehabs	4,178,000	0	0	4,178,000
Castro Valley Dunsmuir, Lahonda	0	3,402,000	0	3,402,000
RCS Facility Assessments	275,000	0	0	275,000
RCS Planning	105,000	0	0	105,000

Appropriations:		Lead Dept: ENG	
Prior Years	\$ 11,284,000	Recurring: No	
2020	\$ 120,000	Funding: BOND/REV 100%	
2021	\$ 0		
2022	\$ 15,763,000		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 0	In Service Date: 30-Jun-35	
<b>Total Cost</b>	<b>\$ 27,167,000</b>		

## Capital Improvement Program - Project Summary

**Project:** Raw Water Studies and Improves      **Project Number:** 1000810

**Strategy:** Water Supply      **Program:** Aqueduct Program

**Justification:**

The project is needed to maintain the integrity of the raw water system, facilitate effective and fast response following an emergency, improve the function of the system, or a combination of all three.

**Description:**

This project consists of evaluating and improving the raw water system to reliably meet operational requirements. FY18-19 accomplishments included completion of the inspection of Pardee Tunnel, continued retrofit work of the settling temperature anchors on Mokelumne Aqueduct #1, and construction of the San Pablo Tower and Tunnel improvements.

In FY20-24, work includes continuing to monitor and retrofit the temperature anchors on Mokelumne Aqueduct #1, design and construction of the Briones Center upgrades, planning and design of the Walnut Creek Raw Water PP upgrades, planning and design of the Lafayette Aqueduct No. 1 (LAF1) relining project, design and construction of the Moraga Raw Water PP upgrades, and completion of the EIR for the Delta Tunnel project.

Beyond FY24, planned work includes the Raw Water Master Plan update, Pardee Tunnel access improvement, completing construction of the LAF1 relining, and completing design for the Delta Tunnel.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Raw Wtr Improvements	33,683,000	43,603,000	85,912,000	163,198,000
Mok Aq No3	23,169,260	29,964,440	19,032,000	72,165,700
Delta Tunnel	10,157,000	6,701,000	38,853,000	55,711,000
Raw Wtr Infrastructure Std	4,988,000	1,653,678	222,000	6,863,678

Appropriations:			
Prior Years	\$ 76,415,610	Lead Dept:	ENG
2020	\$ 0	Recurring:	No
2021	\$ 12,272,000	Funding:	BOND/REV100%
2022	\$ 15,286,118		
2023	\$ 18,054,000		
2024	\$ 36,310,000		
Future Years	\$ 144,019,000		
Total Cost	\$ 302,356,728	In Service Date:	30-Jun-30

## Capital Improvement Program - Project Summary

**Project:** Regulator Rehabilitation

**Project Number:** 000398

**Strategy:** Maintaining Infrastructure

**Program:** Pipelines/Regulators

**Justification:**

This project is needed to rehabilitate regulator facilities that provide insufficient fire flow, present a hazard to operating personnel, or may need to be relocated due to site constraints.

**Description:**

This project rehabilitates or replaces deteriorated, undersized, and unsafe regulators in the distribution system. The District operates 73 regulators with many older than 50 years. Regulator upgrades typically include replacement of deep vaults in the street with shallow vaults located in the sidewalk; improved hatches and ladders; replacement of regulator valves; and the addition of emergency shut-off valves. Ventilation fans, sump pumps, flow meters, lights, and telemetry are added when electrical power is available. This project also includes routine site inspections and evaluations of regulator facilities.

FY18-19 accomplishments include design and construction of the Black Feather Regulator and the Painted Pony Regulator.

FY20-24 planned work includes initiating design and construction of the Circle and Orion Regulators. Design and construction is also scheduled to be completed for Ascot, Bayfair, Campus, Columbia, Girvin, Gramercy, Henry, Keller, La Loma, Maud, Norris Canyon, Potrero, and Villareal Regulators, in addition to three other facilities that have not yet been prioritized.

Beyond FY24, this project allows for rehabilitating or replacing regulator facilities at an average of three every two years. If this schedule is maintained, each regulator will be upgraded once every 50 years.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Future Regulator Rehabs	0	1,086,000	15,290,000	16,376,000
Ascot,Bayfr,Girvn,NorsCyn,Ptro	0	5,294,000	0	5,294,000
Cmpus,Colmbia,Hnry,Kellr,LaLma	0	5,047,000	0	5,047,000
BlkFeathr,PntdPony,Crcle,Orion	1,930,932	2,147,000	0	4,077,932
Gramercy,Maud,Villareal	0	2,633,000	0	2,633,000
Regulator Facility Assessments	275,000	166,000	0	441,000
Standby regulator evaluation	210,000	0	0	210,000

Appropriations:				
Prior Years	\$ 19,414,000	Lead Dept:	ENG	
2020	\$ 698,000	Recurring:	No	
2021	\$ 0	Funding:	BOND/REV	90%
2022	\$ 0		SCC	10%
2023	\$ 15,159,000			
2024	\$ 516,000			
Future Years	\$ 15,290,000	In Service Date:	30-Jun-32	
Total Cost	\$ 51,077,000			

## Capital Improvement Program - Project Summary

**Project:** Reservoir Rehab/Maintenance

**Project Number:** 000716

**Strategy:** Maintaining Infrastructure

**Program:** Reservoir Rehab Program

**Justification:**

This project is necessary to maximize the utility of the District's distribution reservoirs through the rehabilitation, replacement, and demolition of the reservoirs.

**Description:**

The Reservoir Rehabilitation/Maintenance project includes rehabilitation, replacement, and demolition of the steel, concrete, redwood, and pressure reservoirs to improve reservoir roof safety, replace reservoir coatings, improve water quality, and assess the rehabilitation priorities through updates to the Reservoir Infrastructure Rehabilitation Plan (IRP).

In FY18-19, construction contracts were awarded to rehabilitate, replace, or demolish three steel reservoirs each year. A contract for Arcadian, Larkey, and Rheem reservoirs was awarded in FY18, and a contract for Birch, University, Cull Creek, and Sherwick reservoirs was awarded in FY19. Construction for the rehabilitation of Round Hill and El Portal reservoirs, the replacement of Eden Reservoir, and the demolition of Berkeley View No. 2, Muir and Potrero reservoirs were completed in FY18-19. In addition, the rehabilitation of Bacon, Mendocino, and Pearl reservoirs was completed in FY19. Finally, the reservoir rehabilitation priorities were updated in FY19.

In FY20-24, the sustainable rehabilitation rate for steel reservoirs of three to four reservoirs each year will continue. Other planned work includes completion of construction for the new Carisbrook reservoir, and the rehabilitation of Montclair reservoir. Lastly, construction of the reservoir roof safety program, a program which includes improvements for reservoir roof and ladder fall protection, is planned for completion in FY22.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Res Rehab/Mai Prog (Coatings)	117,444,000	78,364,000	85,577,000	281,385,000
Res Supplemental Imprv Proj	25,251,000	25,548,853	0	50,799,853
Reservoir Roof Safety Program	1,342,000	340,000	0	1,682,000
Reservoir Facility Assessments	636,000	168,432	209,000	1,013,432

Appropriations:			
Prior Years	\$ 144,721,000	Lead Dept:	ENG
2020	\$ 38,376,285	Recurring:	No
2021	\$ 16,010,000	Funding:	BOND/REV100%
2022	\$ 18,794,000		
2023	\$ 16,948,000		
2024	\$ 14,293,000		
Future Years	\$ 85,786,000		
Total Cost	\$ 334,928,285	In Service Date:	30-Jun-32

Capital Improvement Program - Project Summary					
<b>Project:</b> Reservoir Tower Modifications		<b>Project Number:</b> 000672			
<b>Strategy:</b> Regulatory Compliance		<b>Program:</b> Dam Safety			
<b>Justification:</b> The California Division of Safety of Dams requires outlet works to remain functional after a major earthquake since the failure of a reservoir tower could cause an uncontrolled release of water or prevent the withdrawal of water from the reservoir.					
<b>Description:</b> This project includes the seismic retrofit of six reservoir towers: Pardee Reservoir and the five Terminal Reservoirs.  The seismic evaluation of Pardee Tower in prior years had identified leakage in Pardee Tunnel, which was then inspected in FY18 and found to be in satisfactory condition.  At the terminal reservoirs, retrofits to Chabot Tower were completed in FY18 as part of the Chabot Dam Seismic Upgrade project. Retrofits to the Upper San Leandro and San Pablo Towers were completed in FY19.  Upcoming work is planned at Briones and Lafayette Reservoir Towers, which require upgrades to resist earthquake loads. For Briones Tower, planning and design of the upgrades started in FY16, with construction planned for FY20-21. For Lafayette Tower, planning and design are underway, with construction planned for FY21-22.					
<b>Key Segments &amp; Appropriations</b>		<b>Prior Yrs</b>	<b>FY20-24</b>	<b>Future Yrs</b>	<b>Total</b>
Briones & Lafayette Tower Mods		21,688,000	0	0	21,688,000
<b>Appropriations:</b>		<b>Lead Dept:</b> ENG <b>Recurring:</b> No			
Prior Years	\$ 33,882,000				
2020	\$ 0	<b>Funding:</b> BOND/REV 100%			
2021	\$ 0				
2022	\$ 0				
2023	\$ 0				
2024	\$ 0				
Future Years	\$ 0	<b>In Service Date:</b> 30-Jun-22			
<b>Total Cost</b>	<b>\$ 33,882,000</b>				

## Capital Improvement Program - Project Summary

**Project:** San Pablo Dam Seismic Mods

**Project Number:** 2001483

**Strategy:** Regulatory Compliance

**Program:** Dam Safety

**Justification:**

Seismic evaluation of the reservoir embankment indicated that the downstream slope may become unstable and the crest settlements may be excessive during the maximum considered earthquake. Retrofit measures are required to stabilize the dam to prevent an uncontrolled release of reservoir water.

**Description:**

This project provided for modifications to the downstream slope of the San Pablo Dam in Orinda to prevent slope instability and crest settlement during a maximum considered earthquake on the Hayward Fault. Upgrades to the embankment including foundation improvements, placement of buttress fill at the downstream toe, and installation of geotechnical instrumentation have been completed. The replacement of the outlet tunnel seismic valve was completed in FY18.

Ongoing work includes biologic monitoring and maintenance for the environmental mitigation habitat at Pavon Creek and Scow Canyon, and meeting reporting requirements to regulatory agencies. Biologic mitigation maintenance and monitoring will continue through FY21.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
San Pablo Dam Mods	81,613,000	0	0	81,613,000

Appropriations:			
Prior Years	\$ 82,588,000	Lead Dept:	ENG
2020	\$ 0	Recurring:	No
2021	\$ 0	Funding:	BOND/REV100%
2022	\$ 0		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 0		
Total Cost	\$ 82,588,000	In Service Date:	31-Dec-21



## Capital Improvement Program - Project Summary

**Project:** Service Lateral Replacements

**Project Number:** 000654

**Strategy:** Maintaining Infrastructure

**Program:** Polybutylene Lateral Replcmt

**Justification:**

This project is needed to manage the cost-effective replacement of defective and/or failed service laterals.

**Description:**

This project previously focused on the replacement of defective polybutylene service laterals, but has been restructured to encompass the replacement of all types of service laterals.

The District responds to 4 to 5 service lateral failures each day (classified as emergency replacements). The majority of this work involves replacing defective polybutylene laterals that were installed during the 1970s and 1980s. A large portion also involves replacing corroding copper laterals that were installed during the 1990s.

The District recognizes the need to identify and replace laterals within areas that have suffered high failure rates. This project continues the practice of pre-emptively replacing polybutylene and copper service laterals where cost-effective opportunities arise. Pre-emptive service lateral replacements is estimated at 300-400 planned replacements (300 services for FY18-19, and 400 services for FY20-21 and thereafter).

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Unplanned Svc Repls	15,941,000	65,671,000	40,856,000	122,468,000
Planned Copper Svc Repls	2,754,000	15,019,000	10,486,000	28,259,000
Planned Polybutylene Svc Repls	2,270,000	3,831,000	0	6,101,000

Appropriations:			
Prior Years	\$ 207,731,000	Lead Dept:	ENG
2020	\$ 24,844,000	Recurring:	No
2021	\$ 16,116,000	Funding:	BOND/REV 100%
2022	\$ 16,052,000		
2023	\$ 14,124,000		
2024	\$ 13,385,000		
Future Years	\$ 51,342,000		
Total Cost	\$ 343,594,000	In Service Date:	30-Jun-30

## Capital Improvement Program - Project Summary

**Project:** So Oakland Hills Cascades PZI

**Project Number:** 2003493

**Strategy:** Extensions and Improvements

**Program:** Pressure Zone Improvements

**Justification:**

The project is needed to replace aging infrastructure, improve water quality, and improve operating efficiency and reliability in the South Oakland Hills Cascades Pressure Zone, which has excess storage capacity causing low reservoir turnover. The project will improve the level of service and reduce long-term operation and maintenance costs.

**Description:**

The South Oakland Hills Cascades Pressure Zone Improvements (PZI) is a detailed master plan that identified a series of projects within the South Oakland Hills, including Palo Seco, Madrone, City Line, Country Club and Peralta Pressure Zones. Work under this project includes 4,700 feet of 16-inch pipeline between May Reservoir and a new Peralta Regulator.

Projects to be implemented under other infrastructure rehabilitation programs include demolition of May Pumping Plant, Peralta Reservoir, Peralta Pumping Plant and 1.5 miles of discharge pipeline; installation of a new Peralta Regulator; replacement of the 2.3 million gallon (MG) Country Club Reservoir with a 0.9 MG reservoir; construction of a second 0.7 MG May Reservoir; replacement of the 0.9 MG City Line Reservoir with a 0.4 MG reservoir; replacement of the 1.8 MG Palo Seco Reservoir with dual 0.8 MG reservoirs; replacement of the 2.8 MG Madrone Reservoir with a 1.2 MG reservoir; and increasing capacities of the Country Club, City Line, Madrone, and Palo Seco PPs. Interim operating plans were developed to improve conveyance and fire flows, and size reservoirs and pumping plants commensurate with demands in the area as part of the master plan.

In FY19, design was completed for the pipeline between May Reservoir and the new Peralta Regulator. Construction of the 4,700 feet of 16-inch pipeline is scheduled for FY20.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Country Club-Peralta PZI	3,058,000	0	0	3,058,000
South Oakland Hills Master PI	221,000	70,000	0	291,000

Appropriations:			
Prior Years	\$ 3,279,000	Lead Dept:	ENG
2020	\$ 70,000	Recurring:	No
2021	\$ 0	Funding:	BOND/REV100%
2022	\$ 0		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 0		
Total Cost	\$ 3,349,000	In Service Date:	30-Jun-21

## Capital Improvement Program - Project Summary

**Project:** Summit Pressure Zone Improve

**Project Number:** 2001457

**Strategy:** Extensions and Improvements

**Program:** Pressure Zone Improvements

**Justification:**

Summit Pressure Zone has hydraulic (transmission) issues, excess storage that creates water quality issues, and aging facilities that require significant maintenance and the mitigation of hazardous materials. The projects will address regulatory requirements, improve level of service, and reduce long-term operation and maintenance costs.

**Description:**

This project includes the replacement of Berryman and Summit Reservoirs, Woods and Shasta Pumping Plants, and a new proposed Lawrence Reservoir, all located in Berkeley.

Construction of the Summit Reservoir and Woods and Shasta Pumping Plants replacement was completed in FY19.

This project also includes a study to be performed in FY21 to determine the required storage at the proposed Lawrence Reservoir site in Strawberry Canyon and the existing Woods Reservoir site. Based on the results of the study, the Lawrence Reservoir would include negotiations with the Lawrence Berkeley National Laboratory and the University of California concerning candidate reservoir sites in FY22, followed by environmental reviews in FY23-24, and design and construction of a new reservoir in FY27-28.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Lawrence Tank Des & Construct	0	0	16,700,000	16,700,000
Pressure Zone Improvemnt Study	2,604,000	0	0	2,604,000

Appropriations:			
Prior Years	\$ 40,259,000	Lead Dept:	ENG
2020	\$ 0	Recurring:	No
2021	\$ 0	Funding:	BOND/REV100%
2022	\$ 0		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 16,700,000		
Total Cost	\$ 56,959,000		

Capital Improvement Program - Project Summary									
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<b>Project:</b> Tice Pumping Plant	<b>Project Number:</b> 2001476
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<b>Project:</b> Tice Pumping Plant	<b>Project Number:</b> 2001476
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<b>Strategy:</b> Extensions and Improvements	<b>Program:</b>	Water Trmt and Trans Impr
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<b>Strategy:</b> Extensions and Improvements	<b>Program:</b>	Water Trmt and Trans Impr
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Justification:
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The project is needed to correct hydraulic and water quality issues in the Colorado Pressure Zone, and to use available capacity from the Walnut Creek Water Treatment Plant (WTP) instead of the Lafayette WTP. The project will improve level of service and reduce long-term operation and maintenance costs.

<b>Description:</b>
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This project includes a new 10 million gallon per day Tice Pumping Plant (PP) in Walnut Creek and approximately 2,700 feet of 20-inch inlet pipeline. The Tice PP project will allow for rezoning of the Tice area of the Colorado Pressure Zone into a new Tice Pressure Zone. Facility sizing will be finalized in FY22 using results from the 2050 Demand Study, and design is scheduled for FY23-24 followed by construction in FY24-26.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Tice PP and I/O Pipeline	888,930	19,179,330	0	20,068,260

<b>Appropriations:</b>		<b>Lead Dept:</b> ENG	
Prior Years	\$ 888,930		
2020	\$ 0	<b>Recurring:</b> No	
2021	\$ 0		
2022	\$ 19,179,330	<b>Funding:</b> BOND/REV 30% SCC 70%	
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 0		
<b>Total Cost</b>	<b>\$ 20,068,260</b>	<b>In Service Date:</b> 30-Jun-26	

## Capital Improvement Program - Project Summary

**Project:** Trans Main Cathodic Protection

**Project Number:** 003026

**Strategy:** Maintaining Infrastructure

**Program:** Corrosion

**Justification:**

Transmission mains and large diameter pipelines constitute the District's costliest pipelines. Many cathodic protection systems have reached the end of their useful life and need rehabilitation to continue to control pipeline corrosion and prevent leaks and breaks.

**Description:**

This project will investigate and prioritize cathodic protection (CP) upgrades for transmission mains and large diameter pipelines, and reconfigure existing, but obsolete CP systems.

In FY18-19, a replacement anode well for the Southern Loop Pipeline was designed, and the CP system evaluations were completed for the Southern Loop Pipeline, USL South 30 Pipeline, Freeport Pipeline, Briones/Orinda Aqueducts and the Walnut Creek/San Ramon Valley Transmission Pipelines.

In FY20-24, CP systems for the Upper San Leandro Raw Water Pipeline and the South 30 Aqueduct will be replaced, and replacement of galvanic anodes on a District-wide basis will commence on plastic-coated steel transmission mains.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Transmission Mains Cathodic Pr	3,434,000	4,262,000	6,268,000	13,964,000

Appropriations:			
Prior Years	\$ 3,434,000	Lead Dept:	ENG
2020	\$ 791,000	Recurring:	No
2021	\$ 821,000	Funding:	BOND/REV 100%
2022	\$ 851,000		
2023	\$ 883,000		
2024	\$ 916,000		
Future Years	\$ 6,268,000		
Total Cost	\$ 13,964,000	In Service Date:	30-Jun-30

## Capital Improvement Program - Project Summary

**Project:** Treatment Plant Upgrades

**Project Number:** 000437

**Strategy:** Water Quality

**Program:** Water Treatment Upgrade

**Justification:**

The project is needed to comply with water quality regulations and to improve the operation, reliability and safety of the water treatment plants (WTPs).

**Description:**

Work completed in FY18-19 included construction of new ozone systems at the Sobrante and Upper San Leandro (USL) WTPs; filter rehabilitation and sodium hypochlorite system replacement at the Orinda WTP; and rehabilitation of old filters and solids handling improvements at the Walnut Creek WTP.

In FY20-24, planned improvements at six water treatment plants include: (1) Orinda WTP - disinfection improvements, including UV and a chlorine contact basin (CCB), and adding a filter air scour system; (2) USL WTP - renovating the solids removal, spent washwater reclamation, and solids handling systems; (3) Sobrante WTP - adding new spent washwater reclamation and solids handling systems, and installing an oxygenation/mixing system in the San Pablo Reservoir to improve water quality; (4) Walnut Creek WTP - rehabilitating Filters 1-4 and initiating the addition of pretreatment for half of the plant and ozone; (5) Lafayette WTP - upgrading the control system and resolving mechanical and structural issues; and (6) San Pablo WTP - upgrading the control system and resolving mechanical and structural issues prior to operation during the Orinda Disinfection (UV/CCB) Project shutdown. Additional work in FY20-24 includes improving the chemical system safety at the five WTPs and upgrading the controls systems at USL and Sobrante WTPs.

Planned work in FY25-28 includes completing construction of Phase I of the Walnut Creek WTP pre-treatment system, and the Sobrante WTP Maintenance and Reliability Improvements.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Orinda WTP	67,597,000	96,200,000	0	163,797,000
WTP Work - Multiple Locations	43,813,102	31,000,000	0	74,813,102
Sobrante WTP	31,074,000	25,500,000	0	56,574,000
USL WTP	20,961,100	26,200,000	0	47,161,100
Walnut Creek WTP	8,150,000	0	0	8,150,000
San Pablo WTP	3,960,000	2,300,000	0	6,260,000
Lafayette WTP	5,044,000	0	0	5,044,000

Appropriations:				
Prior Years	\$ 256,211,032	Lead Dept:	ENG	
2020	\$ 150,200,000	Recurring:	No	
2021	\$ 31,000,000	Funding:	BOND/REV	100%
2022	\$ 0			
2023	\$ 0			
2024	\$ 0			
Future Years	\$ 0			
Total Cost	\$ 437,411,032	In Service Date:	30-Jun-30	

Capital Improvement Program - Project Summary					
<b>Project:</b> Trench Soils Storage Sites		<b>Project Number:</b> 000652			
<b>Strategy:</b> Regulatory Compliance		<b>Program:</b> Trench Spoils			
<b>Justification:</b> The project is needed to ensure adequate capacity for ongoing and future operations at the storage sites; continued regulatory compliance; and cost- efficient and sustainable management practices to address the generation, storage and final end use of trench soils.					
<b>Description:</b> Trench soils are continually generated from ongoing pipeline installations and repairs. The majority of excavated trench soils, over 40,000 cubic yards (CY) per year, are temporarily stockpiled for future reuse or disposal at three District-owned storage sites: Miller Road in Castro Valley, Briones in Orinda and Amador in San Ramon. Potentially contaminated trench soils are handled separately, sampled, and disposed of appropriately. Trench soils production will increase as more pipes are installed under the Pipeline Rebuild Program.  The project includes site management and maintenance to comply with regulatory requirements, periodic removal and reuse of trench soils, and evaluation of potential soils reduction and reuse alternatives. Work in FY18-19 included maintenance of the storage sites to meet stormwater control regulations, annual aerial survey of the sites, development of a trench soils database, removal and reuse of over 300,000 CY of trench soils from the storage sites, development of an RFP for a master plan, and development of a pilot to address the handling of vacuum slurry.  In FY20-24, work will include ongoing maintenance of the storage sites, master plan implementation, vacuum slurry pilot implementation, development of a long-term solution for handling vacuum slurry, potential purchase and planning for the use of an additional storage site, and planning of future off-haul events.					
<b>Key Segments &amp; Appropriations</b>		<b>Prior Yrs</b>	<b>FY20-24</b>	<b>Future Yrs</b>	<b>Total</b>
Trench Soils Management Prog		30,236,786	15,698,000	13,067,000	59,001,786
<b>Appropriations:</b>		<b>Lead Dept:</b> ENG <b>Recurring:</b> Yes			
Prior Years	-				
2020	\$ 10,756,000	<b>Funding:</b> BOND/REV 100%			
2021	\$ 1,058,000				
2022	\$ 1,098,000				
2023	\$ 1,440,000				
2024	\$ 1,346,000				
Future Years	-	<b>In Service Date:</b> Recurring			
<b>Total Cost</b>	-				

### Capital Improvement Program - Project Summary

**Project:** USL Pressure Zone Impr

**Project Number:** 2001462

**Strategy:** Extensions and Improvements

**Program:** Pressure Zone Improvements

**Justification:**

This project is needed to improve monitoring, demand management and operational efficiency in the Upper San Leandro and Aqueduct Pressure Zones, and to improve water quality in El Portal Reservoir.

**Description:**

This project will install bi-directional distribution system flow monitors and pressure transducers at rate control stations to better control and operate the distribution system. Design and construction of two flow monitors in the Upper San Leandro Pressure Zone are scheduled for completion by FY24.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Distribution System Monitors	479,000	310,000	0	789,000

Appropriations:				
Prior Years	\$ 722,000	Lead Dept:	ENG	
2020	\$ 0	Recurring:	No	
2021	\$ 30,000	Funding:	BOND/REV	100%
2022	\$ 0			
2023	\$ 280,000			
2024	\$ 0			
Future Years	\$ 0	In Service Date:	30-Jun-24	
Total Cost	\$ 1,032,000			



## Capital Improvement Program - Project Summary

**Project:** WTTIP Distribution Improvs

**Project Number:** 2003498

**Strategy:** Extensions and Improvements

**Program:** Water Trmt and Trans Impr

**Justification:**

The project is needed to improve the distribution system by addressing existing and future system capacity and demand deficiencies in the Lamorinda and western Walnut Creek area. In addition, the Moraga and Fay Hill open cut reservoirs need replacement due to concerns about the reservoir lining materials that affect operational reliability.

**Description:**

In FY19, design of the Happy Valley Pumping Plant (PP) in Orinda and the Sunnyside PP in Lafayette was completed. In addition, an addendum to the Water Treatment and Transmission Improvements Program Environmental Impact Report was prepared analyzing the change to replace Fay Hill PP at a new location (Rheem PP).

This project includes the following distribution system improvements in Lafayette, Orinda, Moraga and western Walnut Creek: (1) 3,900 feet of 16-inch suction/discharge pipeline and a new 3.2 million gallon per day (MGD) Happy Valley PP, along with a new 1.5 MGD Sunnyside PP in FY20-21; (2) replacement of the 1.6 MGD Fay Hill PP with a 2.6 MGD pumping plant and 3,700 feet of 12-inch suction/discharge pipeline in Rheem Boulevard in Moraga in FY21-23; and (3) a new 2.0 million gallon (MG) Ardith Reservoir and a replacement 1.3 MGD Donald PP in Orinda in FY24-25.

The project also includes: (1) 1,525 feet of 12-inch pipeline in Glen Road and Nordstrom Lane in Lafayette in FY20, which allows for the decommission of Glen Reservoir in FY22; and (2) a 3.0 MGD Withers PP in Lafayette in FY27-28. Beyond FY29, work includes replacement of the Fay Hill Reservoir with two 0.75 MG reservoirs, and replacement of the Moraga Reservoir with a 6.6-MG reservoir.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Happy Valley PP and Pipeline	16,175,547	1,252,358	0	17,427,905
Ardith Reservoir/Donald PP	8,946,525	2,809,475	0	11,756,000
Withers Pumping Plant	455,000	0	7,821,000	8,276,000
Fay Hill Pumping Plant Upgrade	5,175,000	1,225,000	0	6,400,000
Fay Hill Pipeline	328,350	3,034,000	0	3,362,350
Glen Pipeline & Res Decommiss	1,132,050	922,000	0	2,054,050

Appropriations:				
Prior Years	\$ 38,979,978	Lead Dept:	ENG	
2020	\$ 6,433,358	Recurring:	No	
2021	\$ 0	Funding:	BOND/REV	30%
2022	\$ 2,809,475		SCC	70%
2023	\$ 0			
2024	\$ 0			
Future Years	\$ 43,834,000		In Service Date:	30-Jun-40
Total Cost	\$ 92,056,811			

## Capital Improvement Program - Project Summary

**Project:** WTTIP WTP Improvements

**Project Number:** 2003499

**Strategy:** Extensions and Improvements

**Program:** Water Trmt and Trans Impr

**Justification:**

The project is needed to meet existing and future water demands in the Lamorinda and western Walnut Creek area, to meet future water quality standards when treating a diversified water supply, to comply with environmental permit conditions, and to replace and upgrade aging infrastructure.

**Description:**

This project includes upgrades to the Water Treatment Plant (WTPs). In FY19, construction was completed for the Upper San Leandro WTP and Sobrante WTP ozone upgrades. This project also includes the East of Hills System Study, a Contra Costa Water District (CCWD) Intertie, Walnut Creek Aqueduct, Orinda Aqueduct, Castro Valley Pumping Plant (PP) and Rate Control Stations (RCSs), and Lafayette WTP Decommissioning. The East of Hills System Study will be completed in FY21 and will study the decommissioning of the Lafayette WTP and new facilities that can provide treated water supply to the East of Hills during an outage of the Walnut Creek WTP. A new intertie between CCWD and the Leland Pressure Zone will provide backup treated water to the East of Hills with design scheduled for FY23-24 and construction in FY24-26.

The Walnut Creek Aqueduct will convey treated water from the Walnut Creek WTP to the Lafayette WTP with design scheduled for FY23-25, and construction in FY26-29. The Orinda Aqueduct will convey treated water from Orinda WTP to Lafayette WTP or vice versa so that Walnut Creek or Orinda WTPs could supply water to each other during outages with design scheduled for FY26-28, and construction in FY29-32. The Castro Valley PP and two RCSs provide the ability to pump water east through the Southern Loop Pipeline with design scheduled for FY23-24 and construction in FY25-26. The Lafayette WTP Decommissioning has a four year planning study in FY29-32 to identify future property needs, develop a site plan and complete environmental review, followed by design and construction.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Orinda Aqueduct	0	1,900,000	257,900,000	259,800,000
Walnut Creek Aqueduct	0	141,300,000	0	141,300,000
Castro Valley PP and RCSs	0	28,050,000	0	28,050,000
CCWD Interties	0	9,035,000	0	9,035,000
Lafayette WTP Decom. Impr.	0	0	4,362,000	4,362,000
East of Hills System Study	2,327,000	34,000	0	2,361,000

Appropriations:				
Prior Years	\$ 22,114,409	Lead Dept:	ENG	
2020	\$ 34,000	Recurring:	No	
2021	\$ 3,439,000	Funding:	BOND/REV	30%
2022	\$ 0		SCC	70%
2023	\$ 174,946,000			
2024	\$ 1,900,000			
Future Years	\$ 262,262,000	In Service Date:	30-Jun-34	
Total Cost	\$ 464,695,409			

### Capital Improvement Program - Project Summary

**Project:** Water Demand Projection Update      **Project Number:** 2001472  
**Strategy:** Extensions and Improvements      **Program:** Pressure Zone Improvements

**Justification:**

Long-term water supply demand projections are required for distribution system facility sizing, water supply assessments for large developments, updates to the Urban Water Management Plan and Water Supply Management Plan, and other planning needs such as facility outages.

**Description:**

This project tracks and updates District-wide water demand forecasts. A detailed update is completed approximately every 10 years, followed by a mid-cycle update five years later. The upcoming detailed update, called the 2050 Demand Study, will be completed in FY20 and will project demands to the year 2050. A mid-cycle update will be completed in FY24. The project also includes annual tracking of actual water demands compared to forecasts.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Demand Study Update	1,490,000	546,000	1,883,000	3,919,000

Appropriations:		Lead Dept: ENG	
Prior Years	\$ 1,490,000	Recurring: No	
2020	\$ 546,000	Funding: BOND/REV 100%	
2021	\$ 0		
2022	\$ 0		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 1,883,000	In Service Date: 30-Jun-40	
<b>Total Cost</b>	<b>\$ 3,919,000</b>		

## Capital Improvement Program - Project Summary

**Project:** West of Hills Master Plan

**Project Number:** 2001475

**Strategy:** Extensions and Improvements

**Program:** Pressure Zone Improvements

**Justification:**

The project is needed to improve water transmission and water treatment plant capacities to address deficiencies and meet future water demands in the West of Hills distribution system, and decommission the San Pablo Water Treatment Plant (WTP). Also, the Fontaine Pumping Plant (PP) in Oakland is located close to the Hayward Fault and needs to be relocated.

**Description:**

The West of Hills (WOH) Master Plan is a comprehensive regional plan that addresses water treatment plant storage and transmission capacity for the west of hills area, focusing on the Central, Aqueduct and Upper San Leandro Pressure Zones.

The WOH Master Plan recommended improvements at three water treatment plants; two pumping plants; five water storage reservoirs; and approximately 120,000 feet of transmission pipelines. In FY19, an additional project was recommended to decommission the San Pablo WTP.

Individual projects will be grouped together into several Environmental Impact Reports (EIRs), Mitigated Negative Declarations (MNDs), and Notice of Exemptions (NOEs). In FY19, planning was started on the Wildcat PP MND, Fontaine PP MND, Sobrante WTP Supplemental EIR, and WOH Central Pipelines EIR.

In FY19, design was completed on the Wildcat Aqueduct (Berkeley and El Cerrito) Pipeline improvements, which includes 5,450 feet of 48-inch pipeline and 13,500 feet of 36-inch pipeline, with construction scheduled in FY20-21. FY20-25 also includes replacement of the 82nd St Rate Control Station (RCS), Crockett PP Regulator, Wildcat PP, new Fontaine PP, North Wildcat Aqueduct Pipeline improvements, and Sequoia Aqueduct Pipeline improvements.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Sequoia Aq Pipeline Impr.	0	78,421,000	0	78,421,000
Central North Pipeline Impr.	37,272,000	23,972,000	0	61,244,000
No. & So. Wildcat Aq Pipe Impr	33,707,493	12,434,000	0	46,141,493
Wildcat Pumping Plant	0	10,863,000	23,480,000	34,343,000
South 30 Pipeline Impr.	0	0	32,262,000	32,262,000
Genoa Pipeline	0	0	24,816,000	24,816,000
Relocate Fontaine PP	13,266,000	11,018,000	0	24,284,000
West of Hills EIRs	7,742,430	172,000	4,896,000	12,810,430

Appropriations:		Lead Dept: ENG	
Prior Years	\$ 92,972,923	Recurring: No	
2020	\$ 14,871,000	Funding: BOND/REV 100%	
2021	\$ 89,439,000		
2022	\$ 10,863,000		
2023	\$ 0		
2024	\$ 23,972,000		
Future Years	\$ 515,186,000	In Service Date: 30-Jun-40	
<b>Total Cost</b>	<b>\$ 747,303,923</b>		

## Capital Improvement Program - Project Summary

**Project:** Contingency Project Water

**Project Number:** 001300

**Strategy:** Non-Program Specific

**Program:** Non-Program Specific

**Justification:**

This project is required to ensure quick response to unforeseen hazards and emergency situations. Rapid response is critical for maintaining regulatory compliance, public safety, employee safety or addressing other unanticipated essential needs.

**Description:**

This is an ongoing project to provide funding for unanticipated needs which arise before the next budget preparation cycle. Typical examples of such needs include replacement or repairs to facilities and equipment as a result of failures or safety deficiencies, and new projects or the acceleration of planned projects requiring funding before the next budget cycle.

This project also sets aside funds for various projects in the event that grant funding is received such as habitat enhancement and restoration, watershed fencing and trails, Bay Area Regional Desalination Project, water conservation projects, raw water improvements, and East Bayshore recycled water.

In FY20, funds have been set aside for two possible large scale photovoltaic (PV) projects up to 8 MW on District property. In FY20-21, funds have been set aside for the possible replacement of paving rollers and a dump truck for Aqueduct staff. In FY21-22, funds have been set aside for the possible development of additional office and warehouse space at the Oakport facility.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Contingency Proj Water	28,400,111	0	0	28,400,111

Appropriations:			
Prior Years	-	Lead Dept:	FIN
2020	\$ 5,502,000	Recurring:	Yes
2021	\$ 3,061,500	Funding:	BOND/REV 100%
2022	\$ 23,000,000		
2023	\$ 0		
2024	\$ 0		
Future Years	-	In Service Date:	Recurring
Total Cost	-		

### Capital Improvement Program - Project Summary

**Project:** Data & Telecom Infrastructure

**Project Number:** 000363

**Strategy:** Facilities, Servc and Equip

**Program:** Communications

**Justification:**

The District supports a myriad of disparate, older phone systems interconnected via a Centrex-Mate service offering. This project provides a single, geographically redundant and manageable telecommunications service to District staff.

**Description:**

This project upgrades the networking cables, equipment and telephony circuits at office locations outside of the Administration Building to implement a Voice over IP (VoIP) phone system.

Currently, the Administration Building, Pardee, Stockton, Mokelumne, and various departments at the Adeline Maintenance Center are utilizing VoIP phone technology. The VoIP phone system implementation requires the existing network cabling be brought up to specification, and the replacement of network switches, voice gateways and telephony circuits. The project is expected to be completed in FY23.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Phone Infrastructure Upgrade	430,000	0	0	430,000

Appropriations:			
Prior Years	\$ 3,602,756	Lead Dept:	ISD
2020	\$ 0	Recurring:	No
2021	\$ 0	Funding:	BOND/REV100%
2022	\$ 0		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 0		
Total Cost	\$ 3,602,756	In Service Date:	30-Jun-23

### Capital Improvement Program - Project Summary

**Project:** FIS / MMIS Replacement

**Project Number:** 2003539

**Strategy:** Facilities, Servc and Equip

**Program:** Communications

**Justification:**

The Financial Information System is a PeopleSoft product that is no longer supported and is difficult to maintain. A new purchasing/accounting/inventory system will reduce the risk of system failure, reduce vendor dependence, and improve system integration with other District applications.

**Description:**

This project is a joint effort of the Finance, Information Systems, and user departments to replace both the Financial Information System (FIS) and the Materials Management Information System (MMIS) with a new financial, budget, procurement and vendor management system to reduce risks associated with vendor dependence. Evaluating and selecting a replacement alternative and vendor was completed in FY19, along with an implementation plan. The FIS replacement alternative was evaluated along with the MMIS replacement to ensure the necessary functionality between the systems is addressed. Implementation of the new system will take place in FY20-22.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
FIS/MMIS Implementation	7,650,000	7,500,000	0	15,150,000

Appropriations:				
Prior Years	\$ 8,959,155	Lead Dept:	ISD	
2020	\$ 7,500,000	Recurring:	No	
2021	\$ 0	Funding:	BOND/REV	100%
2022	\$ 0			
2023	\$ 0			
2024	\$ 0			
Future Years	\$ 0			
Total Cost	\$ 16,459,155	In Service Date:	30-Jun-22	

### Capital Improvement Program - Project Summary

**Project:** HRIS Replacement

**Project Number:** 2003543

**Strategy:** Facilities, Servc and Equip

**Program:** Communications

**Justification:**

The PeopleSoft Human Resources Information System is reaching the end of its useful life and support for the product is winding down. Loss of support would increase the risk of failure of the District's HR functions and make it difficult to implement required tax and regulatory updates.

**Description:**

This project is a joint effort of the Information Systems, Human Resources and user departments to replace the Human Resources Information System (HRIS), using the best of breed replacement approach which allows for selection and implementation of HRIS modules rather than the entire system in one effort. Documenting high-level requirements for all modules took place in FY18 and will facilitate the sequencing of system module replacement. Preparing a Requests for Proposals, evaluating and selecting alternatives, and implementing the new system modules will take place in FY20-22.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Implementation	6,000,000	900,000	0	6,900,000
Evaluation Option Selection	1,200,000	600,000	0	1,800,000

Appropriations:			
Prior Years	\$ 7,200,000	Lead Dept:	ISD
2020	\$ 1,500,000	Recurring:	No
2021	\$ 0	Funding:	BOND/REV 100%
2022	\$ 0		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 0		
Total Cost	\$ 8,700,000	In Service Date:	30-Jun-22



## Capital Improvement Program - Project Summary

**Project:** Work Mgmt Systems Replacement **Project Number:** 2009564

**Strategy:** Facilities, Servc and Equip **Program:** Communications

**Justification:**

The existing environment consists of multiple standalone applications that are written in outdated languages and provide overlapping functionality. This project consolidates the functionality into a single application that will minimize maintenance and improve the ability to leverage information between work groups to ensure a reliable system for field maintenance work.

**Description:**

This project is a joint effort of Information Systems, Operation Maintenance and user departments to replace the group of work management systems (WMS) which include the general work order system, concrete order system, paving order system and the asset and infrastructure management system. The District supports multiple WMS applications that are written in outdated software and difficult to maintain. Evaluating and selecting replacement alternatives is scheduled for FY19-20, followed by creating an implementation plan, selecting a vendor and implementing a new WMS in FY20-22.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Implementation	1,500,000	2,400,000	0	3,900,000
Evaluation Option Selection	200,000	650,000	0	850,000

Appropriations:		Lead Dept: ISD	
Prior Years	\$ 1,700,000	Recurring: No	
2020	\$ 3,050,000	Funding: BOND/REV 100%	
2021	\$ 0		
2022	\$ 0		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 0	In Service Date: 30-Jun-22	
<b>Total Cost</b>	<b>\$ 4,750,000</b>		

Capital Improvement Program - Project Summary									
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<b>Project:</b> Diesel Engine Retrofit	<b>Project Number:</b> 1002588
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<b>Project:</b> Diesel Engine Retrofit	<b>Project Number:</b> 1002588
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<b>Strategy:</b> Facilities, Servc and Equip	<b>Program:</b>	Vehicle/Equipment
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<b>Strategy:</b> Facilities, Servc and Equip	<b>Program:</b>	Vehicle/Equipment
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Justification:
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The California Air Resources Board establishes and enforces regulations for air emissions. Not being in compliance with established deadlines can result in fines and civil actions against the District.

<b>Description:</b>
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This project will install Best Available Control Technology (BACT) on off-road, on-road, portable and stationary diesel engines to comply with air quality regulations.

All portable diesel engines greater than 50 HP must meet regulations for diesel particulate matter. A single portable diesel electric generator is scheduled for replacement in FY21.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Portable Pump & Generator Repl	5,353,000	0	0	5,353,000

Appropriations:		Lead Dept: MCD Recurring: No	
Prior Years	\$ 16,528,000		
2020	\$ 0	Funding: BOND/REV 100%	
2021	\$ 0		
2022	\$ 0		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 0	In Service Date: 30-Jun-21	
<b>Total Cost</b>	<b>\$ 16,528,000</b>		

Capital Improvement Program - Project Summary					
<b>Project:</b> Facility Paving Project		<b>Project Number:</b> 000089			
<b>Strategy:</b> Maintaining Infrastructure		<b>Program:</b> Reservoir Rehab Program			
<b>Justification:</b> This project ensures safe access to distribution reservoirs for District and non-District individuals who use these roads. Deteriorated roads limit access for staff that operate and maintain the distribution reservoirs.					
<b>Description:</b> This project maintains and replaces distribution reservoir access roads and other facility roads and parking areas.  Planned work in FY20-24 includes paving repairs and replacements for reservoir access roads, Adeline Maintenance Center facilities, and Service Yards.					
<b>Key Segments &amp; Appropriations</b>		<b>Prior Yrs</b>	<b>FY20-24</b>	<b>Future Yrs</b>	<b>Total</b>
Facility Paving		0	2,410,000	1,050,000	3,460,000
<b>Appropriations:</b>		<b>Lead Dept:</b> MCD <b>Recurring:</b> No			
Prior Years	\$ 2,524,909				
2020	\$ 780,000	<b>Funding:</b> BOND/REV 100%			
2021	\$ 525,000				
2022	\$ 725,000				
2023	\$ 230,000				
2024	\$ 150,000				
Future Years	\$ 1,050,000	<b>In Service Date:</b> 30-Jun-30			
<b>Total Cost</b>	<b>\$ 5,984,909</b>				

### Capital Improvement Program - Project Summary

**Project:** Fueling Facility Upgrades

**Project Number:** 1002589

**Strategy:** Facilities, Servc and Equip

**Program:** Vehicle/Equipment

**Justification:**

This project is required to replace existing equipment that is at the end of its useful life cycle. Most of the fuel dispenser units that will be replaced were installed in 1985 and are over 30 years old. There have been numerous service calls for repairs to these facilities.

**Description:**

This project includes planning, design and construction to upgrade District fueling facilities. FY18-19 accomplishments include upgrading the automated fuel management system at thirteen sites to improve the District's ability to track fuel usage and vehicle mileage, and replacing the fuel dispensers at five fueling sites. Improvements scheduled for FY20-23 include replacing fuel dispensers at sixteen sites, and installing the Enhanced Vapor Recovery Phase II equipment for the above ground storage tanks.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Fuel Facility Major Upgrades	7,337,000	2,500,000	0	9,837,000
Fuel Facility Improvements	1,929,000	930,000	0	2,859,000

Appropriations:		Lead Dept: MCD	
Prior Years	\$ 9,266,000	Recurring: No	
2020	\$ 2,765,000	Funding: BOND/REV 100%	
2021	\$ 565,000		
2022	\$ 100,000		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 0	In Service Date: 30-Nov-23	
<b>Total Cost</b>	<b>\$ 12,696,000</b>		

## Capital Improvement Program - Project Summary

**Project:** Meter Replacements

**Project Number:** 000738

**Strategy:** Maintaining Infrastructure

**Program:** Pipelines/Appurtenances

**Justification:**

Meters need to be replaced periodically to accurately record water use and bill customers. Meter boxes need to be replaced periodically to eliminate tripping liability. New meter installation costs are included as part of the new service installation cost.

**Description:**

This is an ongoing project to replace water meters and meter boxes at the end of their useful life, and to replace meters that are believed to be reading inaccurately. In FY18, approximately 15,200 residential meters, 300 small commercial meters and 10 large commercial meters were replaced. An estimated total of 16,000 meters are expected to be replaced in FY19. In future years, replacements will be increased to 20,500 meters to improve reading accuracy.

Also under this project, 300 meters that were difficult or dangerous to read were replaced in FY18 with automated electronic meters under a meter reading mitigation program.

In FY18-19, 10,000 meters were replaced with an integrated system of smart meters under the new Advanced Metering Infrastructure (AMI) pilot project for which the District has received a grant. The project also includes equipment to collect data from these automated meters.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Planned Meter Replacements	23,198,457	21,437,300	36,420,000	81,055,757

Appropriations:				
Prior Years	-	Lead Dept: MCD Recurring: Yes		
2020	\$ 4,091,600			
2021	\$ 4,129,400	Funding: BOND/REV GRANTS	93%	
2022	\$ 4,272,700		7%	
2023	\$ 4,420,600			
2024	\$ 4,523,000			
Future Years	-	In Service Date: Recurring		
Total Cost	-			

### Capital Improvement Program - Project Summary

**Project:** Minor Facility Improvements

**Project Number:** 1002676

**Strategy:** Facilities, Servc and Equip

**Program:** Area Service Center/Bldg Prog

**Justification:**

Each year various relatively low-cost capital improvements and modifications to existing facilities are required. Most involve equipment or structural problems impacting facility integrity, or health and safety issues.

**Description:**

This project consists of low-cost capital improvements to existing facilities that do not require extensive planning or design, or justify a stand alone project. The project also includes cost sharing with the Wastewater System for laboratory upgrades and equipment.

In FY20, projects will include replacing HVAC equipment at the Adeline Maintenance Center (AMC) administration building; lighting upgrades at the AMC Campus; repaving of the AMC Administration parking area; shear and brake press replacements; and the rehabilitation of two kitchenettes at the main Administration Building.

In FY21, projects will include paving and striping of the AMC Shops parking area; HVAC equipment replacement at AMC Shops building; paving and striping at two area yards; and the rehabilitation of six kitchenettes at the main Administration Building.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Laboratory Upgrds-Waterside	2,068,700	5,285,000	0	7,353,700
Minor Facilities Work	2,847,689	3,362,000	0	6,209,689

Appropriations:			
Prior Years	-	Lead Dept:	MCD
2020	\$ 6,130,000	Recurring:	Yes
2021	\$ 765,000	Funding:	BOND/REV 100%
2022	\$ 520,000		
2023	\$ 820,000		
2024	\$ 412,000		
Future Years	-		
Total Cost	-	In Service Date:	Recurring

## Capital Improvement Program - Project Summary

**Project:** OP/NET System

**Project Number:** 000628

**Strategy:** Extensions and Improvements

**Program:** OP/NET

**Justification:**

The OP/NET System is necessary for the operation of the water system. The Remote Terminal Units (RTU) have reached the end of their useful life, and replacing and upgrading system components is necessary to maintain system reliability. The Supervisory Control and Data Acquisition (SCADA) system needs continuous upgrades to ensure its reliability and security.

**Description:**

This project consists of ongoing component upgrades and replacements for the OP/NET System to ensure that it reliably obtains water system information and reports process data to system operators, engineers and planners. The OP/NET System includes the Security System, SCADA system at more than 20 locations, wired and wireless communication networks, monitoring and control equipment at over 300 facilities, and distributed control systems to provide operations staff with the ability to control and monitor water production, treatment, distribution, hydroelectric power generation and field facilities.

In FY18-19, the SCADA system was upgraded with new software and hardware; high speed SCADA communication lines and industrial network routers were added; the wireless broadband communications network was expanded; and 30 RTUs were replaced. The Distributed Control Systems at Sobrante and Walnut Creek Water Treatment Plants were upgraded. In addition, a cyber security vulnerability assessment was performed on our Industrial Control System (ICS) that includes water control, building management control, centralized security, and wastewater control systems. The majority of the cyber security mitigation recommendations were completed in FY19.

In FY20-24, upgrade of the SCADA system will continue, and deployment of additional wireless communication and security/network equipment will coincide with the RTU replacement project. Also, ICS cyber security hardening will continue.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Op/Net Sys Improvements	12,287,000	3,449,000	4,527,700	20,263,700
Recurring Op/Net Improvements	5,752,200	2,270,000	5,840,000	13,862,200
Control System Improvements	2,078,100	2,052,000	3,531,000	7,661,100

Appropriations:			
Prior Years	-	Lead Dept:	MCD
2020	\$ 1,083,000	Recurring:	Yes
2021	\$ 1,017,000	Funding:	BOND/REV 100%
2022	\$ 1,902,000		
2023	\$ 1,968,400		
2024	\$ 1,800,600		
Future Years	-		
Total Cost	-	In Service Date:	Recurring

## Capital Improvement Program - Project Summary

**Project:** Pipeline Appurtenances

**Project Number:** 000218

**Strategy:** Maintaining Infrastructure

**Program:** Pipelines/Appurtenances

**Justification:**

Inoperable water main appurtenances can cause distribution system outages or extend the duration of system outages, adversely affecting customers. Replacement of these appurtenances improves system reliability. This project also includes corrective maintenance on the valves and appurtenances throughout the distribution system.

**Description:**

This is an ongoing project to replace distribution system isolation valves, blow-off assemblies, air valves and other appurtenances that have reached the end of their useful lives, or no longer meet current installation practices. A goal is to inspect and operate 10% of distribution valves annually. The Large Valve Master Plan has identified a number of appurtenances that need to be upgraded to ensure system reliability. In FY17-18, 51 appurtenances, and 45 gate valves were replaced.

In FY17-18, 1,087 gate valve pots were upgraded to G-5's which allow improved access during emergency and routine valve operations and are safer for workers to remove. This level of replacement has continued to increase due to increased funding within cities and counties for paving restoration and street reconstruction.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Annual Appurtenance Work	12,645,970	6,526,000	15,727,000	34,898,970

Appropriations:			
Prior Years	-	Lead Dept:	MCD
2020	\$ 1,238,000	Recurring:	Yes
2021	\$ 1,275,000	Funding:	BOND/REV 100%
2022	\$ 1,313,000		
2023	\$ 1,350,000		
2024	\$ 1,350,000		
Future Years	-		
Total Cost	-	In Service Date:	Recurring



## Capital Improvement Program - Project Summary

**Project:** Small Capital Improvements

**Project Number:** 2006310

**Strategy:** Maintaining Infrastructure

**Program:** Pumping Plant Rehabilitation

**Justification:**

This project replaces critical electrical, mechanical, instrument, and structural components at distribution and treatment facilities that have reached the end of their useful life. Failure of the components can affect water service to customers, fire suppression capability and water quality.

**Description:**

This project provides small, urgent capital improvements to maintain the reliability and safety of pumping plants, reservoirs, regulators, treatment plants, rate control stations, and administration buildings. There are 425 of these facilities, of which 135 have improvements scheduled in the Infrastructure Rehabilitation Plan (IRP). This project provides improvements and the accelerated replacement of failed or unreliable components in some of the 135 facilities slated for eventual rehabilitation. Such improvements are smaller in scale than the typical project under the IRP.

Major projects completed in FY18-19 include the replacement of the emergency generator at Lafayette Water Treatment Plant (WTP); installation of 10-year roofs on Leland and Almond Reservoirs; purchase of six large replacement valves for pumping plants; repair of the Administration Building roof track and carriage system; and repair or replacement of motors at Summit North (El Cerrito), Bryant No. 1 (Lafayette), Danville No. 1 (Danville), Maloney (El Sobrante), Blackhawk East (Danville), and several other smaller pumping plants.

Planned projects for FY20-21 include replacement of electrical components at 10 to 15 pumping plants. Other projects include repair and replacement of motors, valves, piping, instrumentation, retaining walls and roofs at various pumping plants, water treatment plants, regulators and rate control stations.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Small Capital Improvements	12,490,958	9,569,687	18,555,739	40,616,384
Pump Rebuild	0	1,755,732	0	1,755,732

Appropriations:		Lead Dept: MCD	
Prior Years	\$ 14,784,351	Recurring: No	
2020	\$ 0	Funding: BOND/REV 100%	
2021	\$ 2,254,269		
2022	\$ 2,913,110		
2023	\$ 3,022,351		
2024	\$ 3,135,689		
Future Years	\$ 18,555,739	In Service Date: 30-Jun-40	
<b>Total Cost</b>	<b>\$ 44,665,509</b>		

### Capital Improvement Program - Project Summary

**Project:** Upcountry WW Trmt Imprvmts

**Project Number:** 1000816

**Strategy:** Regulatory Compliance

**Program:** Remediation

**Justification:**

Improvements to the upcountry wastewater systems are needed to protect the environment from spills and overflows, and to maintain permit requirements issued by the California Regional Water Quality Control Board.

**Description:**

The Upcountry Wastewater Improvement Program includes multiple projects to upgrade the wastewater collection systems and the treatment and disposal systems serving the Pardee and Camanche facilities. An Upcountry Utility Infrastructure Master Plan recommends upgrading the existing collection facilities to meet new regulatory requirements. In FY18-19 there were no capital projects competed.

FY20-21 priorities include design and construction of the sewer collection system improvements for all remaining areas at Camanche South Shore (CASS). Design and construction for comprehensive improvements to the collection system at Camanche North Shore (CANS) will take place in FY21-22. Design and construction for the remainder of the collection systems at Pardee Center (PACT) and Pardee Recreation Area (PARA) will take place in FY23-24.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Collection System Improvements	9,000,061	18,985,000	500,000	28,485,061

Appropriations:		Lead Dept: MCD	
Prior Years	\$ 21,057,000	Recurring:	No
2020	\$ 11,000,000	Funding:	BOND/REV 100%
2021	\$ 0		
2022	\$ 0		
2023	\$ 4,985,000		
2024	\$ 3,000,000		
Future Years	\$ 500,000	In Service Date: 30-Jun-26	
Total Cost	\$ 40,542,000		

## Capital Improvement Program - Project Summary

**Project:** VA Security System Imprmts

**Project Number:** 1005899

**Strategy:** Facilities, Servc and Equip

**Program:** Security

**Justification:**

The District seeks to maintain a level of security at its facilities to provide a secure workplace; maintain safe and reliable water and wastewater services; ensure compliance with federal, state, and local regulations; and to prevent or mitigate potential damage or loss of assets.

**Description:**

This project includes planning, design, and construction of critical security improvements recommended in the Security Vulnerability Assessment. FY18-19 accomplishments included the installation of new security improvements at South Yard in San Lorenzo and miscellaneous security improvements to various facilities.

Work in FY20-24 includes security improvements for six water treatment plants; Pardee and Camanche Area Control Centers and Powerhouse Warehouses; key pumping plants, reservoirs and distribution facilities; Castenada (San Ramon) and South Yards; and miscellaneous security improvements to various facilities as needed to address regulatory requirements and personnel safety concerns. Future work includes security improvements at the aqueduct and distribution facilities.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Admin Yard Facilities	12,394,500	0	0	12,394,500
Water Treatment Facilities	6,966,200	1,500,000	2,800,000	11,266,200
Distribution Facilities	3,773,500	2,850,000	800,000	7,423,500
Security VA Program Support	2,800,000	1,950,000	300,000	5,050,000
Aqueduct Watershed Facilities	230,000	450,000	1,000,000	1,680,000
Op Sec Improvements	226,000	839,000	187,000	1,252,000
Upcountry Facilities	306,600	150,000	0	456,600

Appropriations:			
Prior Years	\$ 26,696,800	Lead Dept:	MCD
2020	\$ 906,000	Recurring:	No
2021	\$ 511,000	Funding:	BOND/REV 100%
2022	\$ 1,668,000		
2023	\$ 2,124,000		
2024	\$ 2,530,000		
Future Years	\$ 5,087,000		
Total Cost	\$ 39,522,800	In Service Date:	30-Jun-30

### Capital Improvement Program - Project Summary

**Project:** Veh & Hvy Equip Additions, Wtr

**Project Number:** 000528

**Strategy:** Facilities, Servc and Equip

**Program:** Vehicle/Equipment

**Justification:**

Providing staff with the necessary equipment enhances the District's ability to ensure field productivity, and result in reduced operating costs by limiting the need to rent equipment.

**Description:**

This is an ongoing project to acquire additions to the fleet resulting from new positions that require a vehicle to perform necessary job responsibilities, or changing demands on the existing work force and redirection of priorities.

In FY20-21, the District will purchase the necessary equipment to outfit additional staff including new pipeline rebuild crews, replace long-term leased vehicles and decrease the reliance on fully manned and operated contracts (FM&O).

Vehicles and equipment includes skid-steer loaders, compaction equipment, a backhoe, a tractor, an excavator, a dump truck, a bulldozer, utility trucks and vans, a compactor, sedans or SUVs, and concrete and saw trucks and equipment.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Trucks and Heavy Eq Additions	23,841,500	2,700,000	0	26,541,500

Appropriations:			
Prior Years	-	Lead Dept:	MCD
2020	\$ 2,700,000	Recurring:	Yes
2021	\$ 0	Funding:	BOND/REV 100%
2022	\$ 0		
2023	\$ 0		
2024	\$ 0		
Future Years	-		
Total Cost	-	In Service Date:	Recurring

Capital Improvement Program - Project Summary									
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<b>Project:</b> Vehicle Replacements	<b>Project Number:</b> 000526
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<b>Project:</b> Vehicle Replacements	<b>Project Number:</b> 000526
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<b>Strategy:</b> Facilities, Servc and Equip	<b>Program:</b>	Vehicle/Equipment
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<b>Strategy:</b> Facilities, Servc and Equip	<b>Program:</b>	Vehicle/Equipment
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**Justification:**

The Vehicle Study indicates that the criteria for evaluating replacement needs provides the most cost-effective means of fleet management.

<b>Description:</b>
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This is an ongoing project to replace existing vehicles and construction equipment. Under the replacement policy, all vehicles that meet or exceed specific thresholds of age, mileage or clock hours are systematically evaluated. A major consideration is the impact of equipment failure on productivity.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Fleet & Equip Repl/Purchases	94,748,635	17,770,367	0	112,519,002

Appropriations:		Lead Dept:	MCD	
Prior Years	-			Recurring:
2020	\$ 5,000,000	Funding:	VRF	
2021	\$ 3,370,734			
2022	\$ 2,874,723			
2023	\$ 3,868,524			
2024	\$ 2,656,386			
Future Years	-	In Service Date:	Recurring	
Total Cost	-			

## Capital Improvement Program - Project Summary

**Project:** East Bay Watershed Rec Projs

**Project Number:** 000198

**Strategy:** Resource Management

**Program:** Watershed Recreation

**Justification:**

Public facilities need to be maintained; new facilities may need to be constructed; and health, safety and regulatory requirements need to be addressed in a planned and proactive manner to better serve the public and District staff.

**Description:**

In accordance with the East Bay Watershed Master Plan, Range and Fire plans, and regulatory requirements, work includes upgrades and enhancements to watershed land, facilities and recreation areas.

In FY18-19, completed recreation projects at the San Pablo and Lafayette Recreation Areas include: upgraded picnic areas, repaving of 3 miles of hiking trails, play structure upgrades, and upgraded rental boats and fishing docks. Completed watershed projects include 2.5 miles of watershed boundary fencing.

In FY20-24, recreation area projects include sewer system upgrades (lift station and force main), and parking control access improvements. Watershed projects include: trail staging area upgrades (including signage and paving), habitat and pond restoration, fire fuel reduction at Grizzly Peak, replacement of old fire pumps, boundary fence replacement, infrastructure upgrades at the Orinda Watershed Headquarters, and maintenance of Upper San Leandro and San Pablo Reservoir Dams as required by the Division of Safety of Dams.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Lafayette Rec Infrastructure	4,727,000	1,385,000	10,000	6,122,000
San Pablo Rec Infrastructure	2,084,993	934,000	0	3,018,993
EB Public Safety/Reg/Wtr Qual	1,989,210	540,000	0	2,529,210
EB Range/Fire Mgmt Prog Upgrds	1,327,000	310,000	130,000	1,767,000
EB Facilities/Watershed Imprvs	723,500	115,000	0	838,500

Appropriations:			
Prior Years	\$ 13,183,202	Lead Dept:	NRD
2020	\$ 1,250,000	Recurring:	No
2021	\$ 240,000	Funding:	BOND/REV 100%
2022	\$ 527,000		
2023	\$ 412,000		
2024	\$ 855,000		
Future Years	\$ 140,000		
Total Cost	\$ 16,607,202	In Service Date:	30-Jun-24

## Capital Improvement Program - Project Summary

**Project:** F&W Projects and Mok Hatchery

**Project Number:** 1002592

**Strategy:** Resource Management

**Program:** Watershed Recreation

**Justification:**

This project is required to comply with agreements with regulatory agencies to maximize hatchery fish production, to implement measures to protect and enhance the natural (in-river) production of anadromous fish, and to implement habitat and species protection and enhancement measures required by the East Bay Habitat Conservation Plan (HCP).

**Description:**

This project includes the purchase and installation of equipment needed to operate the Mokelumne River Fish Hatchery (MRFH) to ensure compliance with the California Department of Fish and Wildlife operation agreement; and to meet the fisheries monitoring and assessment requirements in the Mokelumne River, Endangered Species Act listings, and Sacramento - San Joaquin Delta operations. The project also includes species and habitat protection and enhancement measures as required by the East Bay HCP.

FY20-24 planned work includes a new fish transport barge, improving the drinking water supply at the MRFH, and implementing habitat construction actions related to Water Quality Control Plan Settlement Agreement. California red-legged frog habitat enhancements, Alameda whipsnake monitoring and invasive species control will be implemented on the East Bay Watershed.

Future work plans include an in-stream fish collection system, upgrades to MRFH to meet new regulatory requirements, and installation of a passive integrated transponder tag reader to support fish monitoring requirements.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Mok River & Hatchery Equipment	1,389,198	1,575,000	150,000	3,114,198
Mok Rvr Riparian Habitat Rest	1,175,000	830,000	115,000	2,120,000
EB Habitat Conservation Plan	460,332	0	0	460,332
Hatchery Reform Measures	220,000	80,000	30,000	330,000
SL Creek Fisheries Mgmt Plan	160,000	0	0	160,000

Appropriations:			
Prior Years	\$ 4,211,332	Lead Dept:	NRD
2020	\$ 325,000	Recurring:	No
2021	\$ 1,275,000	Funding:	BOND/REV 100%
2022	\$ 475,000		
2023	\$ 295,000		
2024	\$ 115,000		
Future Years	\$ 295,000		
Total Cost	\$ 6,991,332	In Service Date:	30-Jun-24

### Capital Improvement Program - Project Summary

**Project:** Mokelumne Watershed Rec HQ

**Project Number:** 000158

**Strategy:** Resource Management

**Program:** Watershed Recreation

**Justification:**

New fuel, warehouse and office facilities are needed due to the condition, size, and lack of critical office and crew facilities in the current headquarters.

**Description:**

This project replaced the Mokelumne headquarters that accommodates 22 staff with a pre-engineered modular administration building with energy efficient and sustainable features.

Phase 2 consists of a new fuel station, a back-up generator, construction of a modular warehouse/shop building, site improvements and vehicle access improvements. Planning, design, and construction of these improvements is planned for FY20-22.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Mok Watershed HQ - Phase 2	1,048,500	2,600,000	0	3,648,500

Appropriations:		Lead Dept: NRD	
Prior Years	\$ 4,159,500	Recurring: No	
2020	\$ 2,600,000	Funding: BOND/REV 100%	
2021	\$ 0		
2022	\$ 0		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 0	In Service Date: 31-Jan-22	
<b>Total Cost</b>	<b>\$ 6,759,500</b>		



## Capital Improvement Program - Project Summary

**Project:** Mokelumne Watershed Rec Projs      **Project Number:** 2008687

**Strategy:** Resource Management      **Program:** Watershed Recreation

**Justification:**

Planned improvements address public safety issues and regulatory requirements for the public and staff facilities in the Mokelumne Watershed.

**Description:**

In accordance with the Mokelumne Watershed Master Plan, Range and Fire plans, and regulatory requirements, work includes upgrades and enhancements to watershed land, facilities and recreation areas.

In FY18-19, the boat restraining barriers and the debris booms at Pardee Reservoir were replaced and upgraded. Boundary fencing was installed/replaced on the Pardee watershed.

In FY20-24, recreation projects include boat barrier protections at Camanche Dam and spillway, cafe and retail upgrades, and repaving of primary roadways. Watershed projects include habitat restoration, hazardous tree removal, and continued boundary fence upgrade and replacement.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Mokelumne Watershed Fencing	1,240,000	600,000	1,050,000	2,890,000
Moke Facilities/Infrastructure	1,305,301	175,000	0	1,480,301
Mok Public Safety/Reg/Wtr Qual	837,200	150,000	0	987,200

Appropriations:		Lead Dept: NRD	
Prior Years	\$ 5,841,284	Recurring: No	
2020	\$ 225,000	Funding: BOND/REV 100%	
2021	\$ 200,000		
2022	\$ 200,000		
2023	\$ 150,000		
2024	\$ 150,000		
Future Years	\$ 1,050,000	In Service Date: 30-Jun-40	
<b>Total Cost</b>	<b>\$ 7,816,284</b>		

## Capital Improvement Program - Project Summary

**Project:** Pardee/Cam Rec Areas Impr Plan      **Project Number:** 2003500

**Strategy:** Resource Management      **Program:** Recreation Areas

**Justification:**

The Camanche and Pardee Recreation Areas are over 50 years old and require upgrades to the utilities, structures and traffic circulation for continued safe operations.

**Description:**

The Pardee and Camanche Recreation Area facilities require periodic upgrades and replacements. This project includes improvements to the roads, parking lots, fuel docks, launch ramps and docks, covered boat berths, stores, recreation halls, maintenance facilities, campgrounds, concession structures, and bathroom and shower buildings.

In FY20-21, the Camanche South Shore above ground fuel tank will be replaced to meet regulatory requirements, and the Camanche South Shore general store will be evaluated for replacement due to settling issues. Also, the piping and delivery equipment will be replaced between the fuel tanks and floating fuel dock at Camanche North Shore. At both Pardee and Camanche, upgrade of the communications networks will be pursued.

Also in FY20-21, a new vault toilet will be installed at the Pardee Recreation Area and the coffee shop will be evaluated for replacement. The restroom at Camanche South Shore Oaks Campground will be evaluated for renovation including the addition of shower facilities.

In FY22-24, major restroom replacements at both Pardee and Camanche Recreation Areas will be undertaken.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Pardee Recreation Area	6,947,312	0	0	6,947,312
Camanche Recreation Area	3,206,000	0	0	3,206,000

Appropriations:			
Prior Years	\$ 10,204,000	Lead Dept:	NRD
2020	\$ 0	Recurring:	No
2021	\$ 0	Funding:	BOND/REV100%
2022	\$ 0		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 0		
Total Cost	\$ 10,204,000	In Service Date:	30-Jun-40

## Capital Improvement Program - Project Summary

**Project:** Penn Mine Remediation

**Project Number:** 001337

**Strategy:** Regulatory Compliance

**Program:** Penn Mine

**Justification:**

Remediation work at Penn Mine landfill was required per a now-rescinded Environmental Protection Agency Order, and a settlement agreement with the State Water Resources Control Board. The Regional Water Quality Control Board (RWQCB) has directed the District to conduct an environmental assessment and remediation of the three mine tailing ponds.

**Description:**

This project evaluates and implements long-term remedial solutions for two sites: former Penn Mine and Poison Lake, with the goal of restoring the Penn Mine site to pre-mining conditions.

Recent accomplishments for Penn Mine include continued leachate removal and the bi-annual groundwater monitoring was conducted and the report delivered to the California Regional Water Quality Control Board (CA RWQCB). The report documents a downward trend in leachate production since the landfill cap was repaired in 2013. The downward trend has continued even after the extremely wet winter of 2016-17 which indicates the landfill cap repair was effective.

Planned activities for FY20-24 include continued leachate removal, continued bi-annual reporting of groundwater conditions, and removal of a weir from an onsite stream.

Recent accomplishments for Poison Lake include completion of the remediation project which involved scraping and capping surface mine waste and armoring the drainage channels with boulders and re-seeding bare areas which have now filled in with grasses. The annual surface water quality monitoring was conducted and the report delivered to the CA RWQCB.

Planned activities for FY20-24 include post-remediation monitoring and surface water quality monitoring and reporting to evaluate any potential impacts from the site to the reservoir.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Penn Mine Restoration - 5A	13,841,462	85,000	595,000	14,521,462

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Appropriations:		Lead Dept: OSD		
Prior Years	\$ 18,221,472	Recurring: No		
2020	\$ 0	Funding: OAG 100%		
2021	\$ 0			
2022	\$ 0			
2023	\$ 0			
2024	\$ 85,000			
Future Years	\$ 595,000	In Service Date: 30-Jun-32		
<b>Total Cost</b>	<b>\$ 18,901,472</b>			

Capital Improvement Program - Project Summary					
<b>Project:</b> Water Loss Control		<b>Project Number:</b> 2012651			
<b>Strategy:</b> Maintaining Infrastructure		<b>Program:</b> Pipelines/Appurtenances			
<b>Justification:</b> This project directly supports the District's compliance with California Senate Bill 555, Water Loss Management.					
<b>Description:</b> This project implements compliance measures associated with California Senate Bill 555, Water Loss Management. Planned accomplishments in FY20-24 include design and construction of water treatment plant flow meter verification pipeline vaults; completion of the District's water loss control master plan; and installation of acoustic leak detection devices.  Planned accomplishments in FY25-29 include manual leak detection surveys and annual verification of water treatment plant flow rates to improve the accuracy of the District's water audit.					
<b>Key Segments &amp; Appropriations</b>		<b>Prior Yrs</b>	<b>FY20-24</b>	<b>Future Yrs</b>	<b>Total</b>
Senate Bill 555 Projects		0	10,923,000	1,437,000	12,360,000
<b>Appropriations:</b>		<b>Lead Dept:</b> OSD <b>Recurring:</b> Yes			
Prior Years	-				
2020	\$ 8,989,000	<b>Funding:</b> BOND/REV 100%			
2021	\$ 1,749,000				
2022	\$ 52,000				
2023	\$ 65,000				
2024	\$ 68,000				
Future Years	-	<b>In Service Date:</b> Recurring			
<b>Total Cost</b>	-				

### Capital Improvement Program - Project Summary

**Project:** 3rd St Sewer Interceptor Rehab

**Project Number:** 2003554

**Strategy:** Maintaining Infrastructure

**Program:** WW Infrastructure Program

**Justification:**

Interceptor concrete pipelines and structures experience sulfide-related corrosion over time. Rehabilitation of the concrete in the aging, over 60-year-old interceptor system is needed to prevent further deterioration and potential collapse, which would create a public health risk and be costly to replace.

**Description:**

This project includes rehabilitation of a 105" diameter segment of the South Interceptor along 3rd Street, as well as the structural rehabilitation of 14 manholes and 7 pipe reaches totaling approximately 11,000 linear feet.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
3rd St Sewer Intrcpt Rehab Ph2	15,803,000	0	0	15,803,000
Special Structures Sewer Rehab	950,000	10,100,000	0	11,050,000
Embarcadero Interceptor Rehab	0	7,900,000	0	7,900,000
2nd St Sewer Intcptr Rhb	0	0	0	0
Abandon QMS at MH S66	0	0	0	0

Appropriations:		Lead Dept: WAS	
Prior Years	\$ 24,285,667	Recurring: No	
2020	\$ 4,000,000	Funding: BOND/REV 100%	
2021	\$ 0		
2022	\$ 0		
2023	\$ 0		
2024	\$ 14,000,000		
Future Years	\$ 0	In Service Date: 31-Dec-28	
<b>Total Cost</b>	<b>\$ 42,285,667</b>		

Capital Improvement Program - Project Summary					
<b>Project:</b> Centrifuge Replacement		<b>Project Number:</b> 000989			
<b>Strategy:</b> Maintaining Infrastructure		<b>Program:</b> WW Infrastructure Program			
<b>Justification:</b> Periodic replacement of the centrifuges with state-of-the-art equipment is necessary to maintain a reliable, cost-effective solids handling process.					
<b>Description:</b> This project provides for the cyclic replacement of centrifuges for sludge dewatering at the Main Wastewater Treatment Plant. The first centrifuge has been replaced. Two additional centrifuges are planned to be replaced in FY24-28.					
<b>Key Segments &amp; Appropriations</b>		<b>Prior Yrs</b>	<b>FY20-24</b>	<b>Future Yrs</b>	<b>Total</b>
Centrifuge Replacement - Ph 2		0	11,726,000	0	11,726,000
Centrifuge Replacement - Ph 3		0	0	0	0
<b>Appropriations:</b>		<b>Lead Dept:</b> WAS <b>Recurring:</b> No			
Prior Years	\$ 22,402,832				
2020	\$ 0	<b>Funding:</b> BOND/REV 100%			
2021	\$ 0				
2022	\$ 0				
2023	\$ 0				
2024	\$ 11,726,000				
Future Years	\$ 0	<b>In Service Date:</b> 30-Jun-28			
<b>Total Cost</b>	<b>\$ 34,128,832</b>				

### Capital Improvement Program - Project Summary

**Project:** Collection System Master Plan

**Project Number:** 2006691

**Strategy:** Maintaining Infrastructure

**Program:** WW Infrastructure Program

**Justification:**

Master planning for the collection system is required to identify and prioritize infrastructure renewal projects to maintain reliable operation of the wet weather facilities, pump stations, gravity interceptors, and force mains.

**Description:**

This project includes master plans for wastewater interceptors, pump stations, and wet weather facilities. Master planning activities include evaluating the condition of existing infrastructure, identifying future needs, and developing a prioritized rehabilitation and replacement schedule. This work will build on recent inspections and asset management activities. An update to the Interceptor Master Plan will be completed in FY24.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Interceptor Master Plan Update	0	200,000	0	200,000

Appropriations:		Lead Dept: WAS	
Prior Years	\$ 0	Recurring: No	
2020	\$ 0	Funding: BOND/REV 100%	
2021	\$ 0		
2022	\$ 0		
2023	\$ 0		
2024	\$ 200,000		
Future Years	\$ 0	In Service Date: 30-Jun-24	
<b>Total Cost</b>	<b>\$ 200,000</b>		

## Capital Improvement Program - Project Summary

**Project:** Concrete Rehab at SD1

**Project Number:** 000969

**Strategy:** Maintaining Infrastructure

**Program:** WW Infrastructure Program

**Justification:**

Concrete rehabilitation must be completed to prevent degradation of structures to the point where the steel reinforcement bars are exposed, replacement costs increase significantly, and/or treatment processes are disrupted.

**Description:**

This project includes design and construction for rehabilitating critical concrete hydraulic structures, channels, and gates at the Main Wastewater Treatment Plant. It includes the primary sedimentation basins and channels, secondary aeration reactor basins, grit channels, and the plant effluent channel. Sulfides and other constituents in wastewater have accelerated corrosion of the concrete in these aging facilities.

Repair of the Primary Tank Channels is being conducted in six phases. The fourth phase was completed in FY18, and Phases 5 through 6 are scheduled to take place from FY19 through FY24. Repair of the secondary aeration reactor basins will be completed in four phases, including the repair of two tanks per year beginning in FY20. Inspection of the secondary clarifiers is scheduled for FY21-22.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Repair Prim Tank Channels Ph 5	13,880,000	1,000,000	0	14,880,000
Repair Reactor Basin Conc Ph 2	0	3,610,000	0	3,610,000
Repair Reactor Basin Conc Ph1	2,709,000	900,000	0	3,609,000
Repair Prim Tank Channels Ph 6	230,000	1,900,000	0	2,130,000
IPS Infl & Effl Channel Assess	200,000	0	0	200,000
Sec Clarifier Concrete Rehab	0	184,000	0	184,000
Sec Effluent Channel Assess	0	50,000	0	50,000
Repair Reactor Basin Conc Ph 3	0	0	0	0

Appropriations:		Lead Dept: WAS	
Prior Years	\$ 40,681,838	Recurring:	No
2020	\$ 1,950,000	Funding:	BOND/REV 100%
2021	\$ 184,000		
2022	\$ 1,900,000		
2023	\$ 3,610,000		
2024	\$ 0		
Future Years	\$ 0	In Service Date: 31-Dec-40	
Total Cost	\$ 48,325,838		



## Capital Improvement Program - Project Summary

**Project:** DCS Upgrades

**Project Number:** 1005995

**Strategy:** Maintaining Infrastructure

**Program:** WW Infrastructure Program

**Justification:**

The DCS operator and engineering workstations, servers, network equipment, and associated software require periodic upgrade to maintain reliable operations and to keep the system current.

**Description:**

This project will replace the Distributed Control System (DCS), including operator and engineering work stations, servers, network equipment and associated software. This work will bring the DCS up to current standards. Regular replacement will take place every four to five years. The next replacement cycle is scheduled for FY23-FY24.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
DCS Console Replacement - Ph 3	0	4,000,000	0	4,000,000
Wastewater DCS Alarm Mgmnt Sys	0	275,000	0	275,000

Appropriations:		Lead Dept: WAS	
Prior Years	\$ 10,237,263	Recurring: No	
2020	\$ 275,000	Funding: BOND/REV 100%	
2021	\$ 0		
2022	\$ 0		
2023	\$ 4,000,000		
2024	\$ 0		
Future Years	\$ 0	In Service Date: 31-Dec-24	
<b>Total Cost</b>	<b>\$ 14,512,263</b>		

### Capital Improvement Program - Project Summary

**Project:** Dechlorination Facility Impmts

**Project Number:** 1000800

**Strategy:** Regulatory Compliance

**Program:** WW Regulatory Compliance

**Justification:**

Upgrades to the dechlorination facilities are required to ensure performance and continuous dechlorination of effluent prior to discharge to San Francisco Bay.

**Description:**

This project includes a variety of improvements to the dechlorination facilities including automating the dechlorination process; relocating the sampling and Sodium Bisulfite System (SBS); installing a new SBS injection/mixing system in the outfall pipeline; replacing the existing SBS storage tanks; and installing plant effluent metering to allow for automatic dechlorination control. The work is being completed in three phases.

Design for the Phase 2B work is in progress and includes seismic upgrades to the Injector Building and standby power and modification of the Distributed Control System controls for greater reliability. Phase 3 includes automation of the dechlorination process and replacement of the SBS storage tanks and is scheduled to take place in FY21- 24.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Dechlorination Facility Impr	3,382,500	4,077,000	0	7,459,500
Navy Pipeline Modifications	705,000	0	0	705,000

Appropriations:			
Prior Years	\$ 4,356,500	Lead Dept:	WAS
2020	\$ 4,077,000	Recurring:	No
2021	\$ 0	Funding:	BOND/REV 100%
2022	\$ 0		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 0		
Total Cost	\$ 8,433,500	In Service Date:	31-Dec-24

### Capital Improvement Program - Project Summary

**Project:** Digester Upgrade

**Project Number:** 000987

**Strategy:** Maintaining Infrastructure

**Program:** WW Infrastructure Program

**Justification:**

Loss of digesters due to corrosion of covers would adversely impact operations at the Main Wastewater Treatment Plant, and inadequate mixing and heating can hinder sludge treatment and compliance with EPA regulations.

**Description:**

This project includes four phases to rehabilitate 11 digesters with new fixed covers and upgraded mixing infrastructure. The second phase, rehabilitating four additional digesters, was completed in FY15.

The third phase includes seismic upgrades for the three second-stage digesters and replacing the floating covers with new dual-membrane covers. Construction is scheduled for FY20-22.

The fourth phase includes the addition of external pump mixing for the second-stage digesters, replacing the digester control building roof, and electrical upgrades. Design for the fourth phase is scheduled to begin in FY27 and construction is scheduled to begin in FY28.

This project also includes ongoing digester coating inspections and rehabilitation.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Digester Upgrades Ph 3	17,138,000	2,000,000	0	19,138,000
Digester Coating Insp & Rehab	7,725,000	0	0	7,725,000
Digester Upgrades Ph 4	0	0	0	0

Appropriations:			
Prior Years	\$ 126,495,163	Lead Dept:	WAS
2020	\$ 2,000,000	Recurring:	No
2021	\$ 0	Funding:	BOND/REV 100%
2022	\$ 0		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 0		
Total Cost	\$ 128,495,163	In Service Date:	31-Dec-30

### Capital Improvement Program - Project Summary

**Project:** Infiltration/Inflow Contrl Prj

**Project Number:** 000570

**Strategy:** Regulatory Compliance

**Program:** WW Regulatory Compliance

**Justification:**

This project is required to comply with conditions of the District's wet weather facility NPDES permits and the Wet Weather Consent Decree (effective September 2014).

**Description:**

This project includes work required by the National Pollutant Discharge Elimination System (NPDES) permit and the Wet Weather Consent Decree. Ongoing work is required for the continued implementation of the regional private sewer lateral ordinance, and continued flow modeling and reporting. This project also includes several components to promote the more efficient operation of the interceptor system and pump stations to reduce wet weather facility discharges.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Infiltration/Inflow Program	11,696,000	1,900,000	0	13,596,000

Appropriations:				
Prior Years	\$ 27,011,913	Lead Dept:	WAS	
2020	\$ 1,900,000	Recurring:	No	
2021	\$ 0	Funding:	BOND/REV	100%
2022	\$ 0			
2023	\$ 0			
2024	\$ 0			
Future Years	\$ 0			
Total Cost	\$ 28,911,913	In Service Date:	31-Dec-32	

## Capital Improvement Program - Project Summary

**Project:** Interceptor Corrosion Prevent

**Project Number:** 2005283

**Strategy:** Maintaining Infrastructure

**Program:** WW Infrastructure Program

**Justification:**

Recent inspection of portions of the interceptor system identified areas with severe corrosion. Cathodic protection, corrosion prevention, condition assessments, and asset management are essential elements in maintaining the integrity of the interceptor system.

**Description:**

This project provides for cathodic protection and corrosion prevention in the interceptor system. Based on an evaluation of potential methods for corrosion prevention, various improvements to rehabilitate the cathodic protection system have been recommended. The project also includes periodic inspection of the interceptors and force mains, and ongoing work to raise buried manholes to grade and locate missing manholes.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Alameda Interceptor Rehab Ph 3	0	8,480,000	0	8,480,000
Alameda Channel Crossing Imprv	0	6,900,000	0	6,900,000
Interceptor Pipe and MH Inspec	0	3,284,000	0	3,284,000
Remote Fac Locate & MH Raising	1,117,000	409,000	0	1,526,000
Cathodic Protection Project	1,399,000	0	0	1,399,000
Intercept Corrosion Prevention	350,000	0	0	350,000

Appropriations:		Lead Dept: WAS	
Prior Years	\$ 8,220,543	Recurring: No	
2020	\$ 409,000	Funding: BOND/REV 100%	
2021	\$ 0		
2022	\$ 6,900,000		
2023	\$ 11,764,000		
2024	\$ 0		
Future Years	\$ 0	In Service Date: 31-Dec-30	
<b>Total Cost</b>	<b>\$ 27,293,543</b>		

### Capital Improvement Program - Project Summary

**Project:** Lab Improvements & Equip't

**Project Number:** 2011852

**Strategy:** Maintaining Infrastructure

**Program:** WW Infrastructure Program

**Justification:**

Laboratory rehabilitation and upgrades provide operational efficiencies and improved regulatory compliance monitoring and reporting for the entire District.

**Description:**

This project will provide for the periodic replacement and rehabilitation of facilities, equipment, and information management systems in the District Laboratory located at the Main Wastewater Treatment Plant. Improvements planned in FY20-24 include the design and implementation of a replacement for the Laboratory Information Management System (LIMS) and the replacement of various pieces of laboratory analytical equipment. Routine replacement of laboratory equipment is planned to continue in FY25-29.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Lab Equipment	2,622,023	486,000	1,000,000	4,108,023
LIMS Replacement Project	1,250,000	1,025,000	0	2,275,000
Laboratory Upgrades	200,000	1,030,000	0	1,230,000

Appropriations:		Lead Dept: WAS	
Prior Years	\$ 4,072,023	Recurring: No	
2020	\$ 2,156,000	Funding: BOND/REV 100%	
2021	\$ 85,000		
2022	\$ 100,000		
2023	\$ 100,000		
2024	\$ 100,000		
Future Years	\$ 1,000,000	In Service Date: 30-Jun-30	
<b>Total Cost</b>	<b>\$ 7,613,023</b>		

### Capital Improvement Program - Project Summary

**Project:** MWWTP Master Planning

**Project Number:** 000601

**Strategy:** Maintaining Infrastructure

**Program:** WW Infrastructure Program

**Justification:**

The Main Wastewater Treatment Plant (MWWTP) was constructed in 1951. Many of the facilities are aging and require improvements, repairs and rehabilitation to maintain reliable service. Also, changing water quality and environmental regulations require investigation into viable options for MWWTP infrastructure upgrades.

**Description:**

This project will develop an integrated MWWTP Master Plan which will serve as a roadmap to guide improvement projects, land uses, power supply plans, and the Resource Recovery Program for the next 30 years. The Master Plan will help to prioritize projects and determine funding needed to repair and upgrade the MWWTP's aging infrastructure. It will proactively address increasingly stringent water quality and environmental regulations to protect public health and promote stewardship of the San Francisco Bay. It will also address potential climate change impacts and incorporate principles of sustainability.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
MWWTP Master Plan	1,209,000	1,600,000	0	2,809,000
OAB Purch Environ Remediation	2,025,000	0	0	2,025,000
Master Land Use/Facility Plan	1,585,000	0	0	1,585,000

Appropriations:		Lead Dept: WAS	
Prior Years	\$ 19,827,263	Recurring: No	
2020	\$ 1,600,000	Funding: BOND/REV 100%	
2021	\$ 0		
2022	\$ 0		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 0	In Service Date: 30-Jun-29	
<b>Total Cost</b>	<b>\$ 21,427,263</b>		

### Capital Improvement Program - Project Summary

**Project:** MWWTP Pwr Dist Sys Upgrade

**Project Number:** 000140

**Strategy:** Maintaining Infrastructure

**Program:** WW Infrastructure Program

**Justification:**

Electrical reliability improvements are required to maintain the power supply to key facilities and quickly restore power following an outage. A prolonged power outage at the the Main Wastewater Treatment Plant (MWWTP) would likely result in permit violations.

**Description:**

This project includes a number of tasks to increase the reliability of the power distribution system at the MWWTP. Work in FY18-24 include arc flash studies, replacement of power meters, reconfiguration of the internal power distribution system for added redundancy, seismic improvements, and an electrical system master plan.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Split IPS & EPS Power Dist Sys	1,683,000	0	0	1,683,000
Arc Flash	582,000	398,000	0	980,000
Power Distribution Sys Equip	0	515,000	0	515,000
Electrical Master Plan	300,000	0	0	300,000
MWWTP Elctrcl Reliability Impr	275,000	0	0	275,000

Appropriations:		Lead Dept: WAS Recurring: No	
Prior Years	\$ 15,138,737		
2020	\$ 913,000	Funding: BOND/REV 100%	
2021	\$ 0		
2022	\$ 0		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 0	In Service Date: 30-Jun-27	
Total Cost	\$ 16,051,737		



Capital Improvement Program - Project Summary					
<b>Project:</b> Motor Control Center Repl		<b>Project Number:</b> 001004			
<b>Strategy:</b> Maintaining Infrastructure		<b>Program:</b> WW Infrastructure Program			
<b>Justification:</b> Replacement of Motor Control Centers (MCCs) nearing the end of their service life is required to ensure continued reliable operation of equipment at the Main Wastewater Treatment Plant.					
<b>Description:</b> This project provides for the cyclical replacement of all MCCs that are at the end of their service life and includes the MCCs at the Secondary Reactor Deck (Oxygenation Tank) and Aerated Grit. The most critical MCC was replaced in FY16; the next MCC replacement is scheduled for FY23-24.					
<b>Key Segments &amp; Appropriations</b>		<b>Prior Yrs</b>	<b>FY20-24</b>	<b>Future Yrs</b>	<b>Total</b>
Main Plant MCC Replace - Ph 2		1,560,000	1,350,000	0	2,910,000
<b>Appropriations:</b>		<b>Lead Dept:</b> WAS			
Prior Years	\$ 2,529,000				
2020	\$ 0	<b>Recurring:</b> No			
2021	\$ 0				
2022	\$ 0	<b>Funding:</b> BOND/REV 100%			
2023	\$ 1,350,000				
2024	\$ 0	<b>In Service Date:</b> 31-Dec-24			
Future Years	\$ 0				
<b>Total Cost</b>	<b>\$ 3,879,000</b>				

### Capital Improvement Program - Project Summary

**Project:** NPDES Compliance

**Project Number:** 000599

**Strategy:** Regulatory Compliance

**Program:** WW Regulatory Compliance

**Justification:**

The project is necessary to reduce the risk of permit violations, including upgrades to ensure timely activation of the wet weather facilities to comply with the MWWTP NPDES permit.

**Description:**

This project consists of improvements necessary to meet the Main Wastewater Treatment Plant (MWWTP) National Pollutant Discharge Elimination System (NPDES) permit requirements. Work remaining under this project includes the installation of new level monitoring stations in the South Interceptor, which is scheduled for completion in FY20. Upgrades to secondary reactors are scheduled for FY23-27.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Reactors Stage 3 Aerator Conv	0	6,090,000	0	6,090,000
So Intercept Level Monitor Sta	779,500	1,200,000	0	1,979,500

Appropriations:		Lead Dept: WAS	
Prior Years	\$ 8,643,234	Recurring: No	
2020	\$ 1,200,000	Funding: BOND/REV 100%	
2021	\$ 0		
2022	\$ 0		
2023	\$ 6,090,000		
2024	\$ 0		
Future Years	\$ 0	In Service Date: 31-Dec-27	
<b>Total Cost</b>	<b>\$ 15,933,234</b>		

Capital Improvement Program - Project Summary									
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<b>Project:</b> North Interceptor Rehab	<b>Project Number:</b> 2009794
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<b>Project:</b> North Interceptor Rehab	<b>Project Number:</b> 2009794
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<b>Strategy:</b> Maintaining Infrastructure	<b>Program:</b>	WW Infrastructure Program
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<b>Strategy:</b> Maintaining Infrastructure	<b>Program:</b>	WW Infrastructure Program
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<b>Strategy:</b> Maintaining Infrastructure	<b>Program:</b>	WW Infrastructure Program
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**Justification:**

Interceptor concrete pipelines and structures experience sulfide-related corrosion over time. Rehabilitation of the concrete in the aging, over 60-year-old interceptor system is needed to prevent further deterioration and potential collapse, which would create a public health risk and be costly to replace.

<b>Description:</b>
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This project includes the rehabilitation of 450 linear feet of the 66-inch diameter North Interceptor, and the rehabilitation of four manholes. The work was identified based on a condition assessment and is scheduled for FY25-26.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
North Interceptor Rehab	0	0	0	0

Appropriations:		Lead Dept: WAS Recurring: No  Funding: BOND/REV 100%       In Service Date: 31-Dec-26
Prior Years	\$ 0	
2020	\$ 0	
2021	\$ 0	
2022	\$ 0	
2023	\$ 0	
2024	\$ 0	
Future Years	\$ 0	
Total Cost	\$ 0	

Capital Improvement Program - Project Summary					
<b>Project:</b> Nutrient Management		<b>Project Number:</b> 2011022			
<b>Strategy:</b> Regulatory Compliance		<b>Program:</b> WW Regulatory Compliance			
<b>Justification:</b> Future nutrient watershed permits may have more stringent requirements and require implementation of sidestream treatment to maintain compliance with the National Pollutant Discharge Elimination System (NPDES) permit.					
<b>Description:</b> Nutrient discharge to the San Francisco Bay continues to be a key area of concern for regulators. This project includes the development of strategic nutrient management solutions to meet current and future regulatory requirements. A master plan will be conducted to identify and evaluate a range of cost-effective alternatives to achieve nutrient reductions for the Main Wastewater Treatment Plant that provide broad environmental and public health benefits. Work planned for FY25-29 represents the potential implementation of nutrient reduction alternatives, pending Master Plan recommendations and regulatory developments.					
<b>Key Segments &amp; Appropriations</b>		<b>Prior Yrs</b>	<b>FY20-24</b>	<b>Future Yrs</b>	<b>Total</b>
Nutrient Sidestream Treatment		5,300,000	0	0	5,300,000
Nutrient Mainstream Treatment		0	0	0	0
<b>Appropriations:</b>		<b>Lead Dept:</b> WAS <b>Recurring:</b> No			
Prior Years	\$ 5,300,000				
2020	\$ 0	<b>Funding:</b> BOND/REV 100%			
2021	\$ 0				
2022	\$ 0				
2023	\$ 0				
2024	\$ 0				
Future Years	\$ 0	<b>In Service Date:</b> 31-Dec-30			
<b>Total Cost</b>	<b>\$ 5,300,000</b>				

Capital Improvement Program - Project Summary					
<b>Project:</b> Odor Control Improvements		<b>Project Number:</b> 000963			
<b>Strategy:</b> Maintaining Infrastructure		<b>Program:</b> WW Infrastructure Program			
<b>Justification:</b> Odor control projects reduce onsite and offsite odor impacts and also result in reduced offsite odor complaints, improved community relationships, an improved work environment, and continued compliance with Bay Area Air Quality Management requirements.					
<b>Description:</b> This project provides for the design and construction of odor control facilities in the wastewater collection system and at the Main Wastewater Treatment Plant. This project implements improvements that were identified and prioritized in the Odor Control Master Plan.  The replacement and upgrade of an odor control unit at the influent pump station was completed in FY19. Planning and design for the replacement of the odor control system at the solids dewatering building will begin in FY28. Improvements to the odor control systems for high strength wastes are being completed as part of the Digester Upgrades Phase 3 Project.					
<b>Key Segments &amp; Appropriations</b>		<b>Prior Yrs</b>	<b>FY20-24</b>	<b>Future Yrs</b>	<b>Total</b>
Odor Control Dewatering Bldg		2,850,000	0	0	2,850,000
<b>Appropriations:</b>		<b>Lead Dept:</b> WAS <b>Recurring:</b> No			
Prior Years	\$ 23,880,966				
2020	\$ 0	<b>Funding:</b> BOND/REV 100%			
2021	\$ 0				
2022	\$ 0				
2023	\$ 0				
2024	\$ 0				
Future Years	\$ 0	<b>In Service Date:</b> 31-Dec-29			
<b>Total Cost</b>	<b>\$ 23,880,966</b>				

### Capital Improvement Program - Project Summary

**Project:** Outfall Investigation Project

**Project Number:** 000985

**Strategy:** Maintaining Infrastructure

**Program:** WW Infrastructure Program

**Justification:**

The integrity of the effluent outfall is essential for compliance with the Main Wastewater Treatment Plant (MWWTP) National Pollutant Discharge Elimination System (NPDES) permit.

**Description:**

The effluent outfall, which is over 60 years old, must be inspected periodically to identify corrosion and/or deterioration damage and plan for future rehabilitation. Inspection of the entire submerged portions is required by MWWTP NPDES permit, and was completed in 2015. Repeat inspections are planned for FY20-25, and upgrades are scheduled to begin in FY26.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Outfall Investigation	1,089,000	0	0	1,089,000
MWWTP Outfall Upgrades	0	0	0	0

Appropriations:			
Prior Years	\$ 4,085,000	Lead Dept:	WAS
2020	\$ 0	Recurring:	No
2021	\$ 0	Funding:	BOND/REV100%
2022	\$ 0		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 0		
Total Cost	\$ 4,085,000	In Service Date:	31-Dec-30

### Capital Improvement Program - Project Summary

**Project:** PGS Engine Overhaul

**Project Number:** 2001379

**Strategy:** Maintaining Infrastructure

**Program:** WW Infrastructure Program

**Justification:**

Proper operation and performance of the cogeneration engines is necessary to avoid air permit violations. In addition, an outage to the engines would require the District to flare biogas and to purchase power.

**Description:**

This project covers the recurring major rebuild of the three cogeneration engines at the Main Wastewater Treatment Plant (MWWTP) Power Generation Station (PGS). These engines utilize biogas to produce power and process heat for use at the MWWTP. The current overhaul will be completed in FY20, with the next overhaul scheduled for FY23.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
PGS Engine Overhaul	9,829,000	1,800,000	0	11,629,000

Appropriations:		Lead Dept: WAS	
Prior Years	\$ 9,829,000	Recurring: No	
2020	\$ 0	Funding: BOND/REV 100%	
2021	\$ 0		
2022	\$ 0		
2023	\$ 1,800,000		
2024	\$ 0		
Future Years	\$ 0	In Service Date: 31-Dec-24	
<b>Total Cost</b>	<b>\$ 11,629,000</b>		

## Capital Improvement Program - Project Summary

**Project:** PGS Expansion

**Project Number:** 2003556

**Strategy:** Maintaining Infrastructure

**Program:** WW Infrastructure Program

**Justification:**

The Power Generation Station (PGS) expansion results in additional power production and revenue, reduces flaring, provides additional process heat, increases electrical reliability at the Main Wastewater Treatment Plant (MWWTP), and is consistent with the District's Energy and Sustainability Policies.

**Description:**

This renewable energy project expanded the PGS at the MWWTP from 6.5 to 11 megawatts when a new biogas-powered turbine was installed in FY12. A follow-up phase to install two new flares was completed in FY17. The project includes work to improve reliability by replacing aging gas piping and mechanical equipment in FY20-23. In addition, the original four flares will be rehabilitated in FY20-21. Further expansion is planned for FY28-29.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
PGS Reliability Improv Ph 3	4,562,000	3,038,000	0	7,600,000
PGS Reliability Improvements	7,300,000	117,000	0	7,417,000
PGS Reliability Improv Ph 4	0	3,400,000	0	3,400,000
Upgrades to Original Flares	1,200,000	121,000	0	1,321,000
Gas Flare Expansion	0	0	0	0

Appropriations:			
Prior Years	\$ 50,540,723	Lead Dept:	WAS
2020	\$ 3,276,000	Recurring:	No
2021	\$ 0	Funding:	BOND/REV 100%
2022	\$ 3,400,000		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 0		
Total Cost	\$ 57,216,723	In Service Date:	31-Dec-29



### Capital Improvement Program - Project Summary

**Project:** PS Q FM Dual-Mode Operation

**Project Number:** 2006716

**Strategy:** Regulatory Compliance

**Program:** WW Regulatory Compliance

**Justification:**

This project is required to comply with the Wet Weather Consent Decree (effective September 2014).

**Description:**

This project includes the design and construction of modifications to portions of the North Interceptor to allow dual-mode operation of Pump Station Q (PS Q) for use as either a gravity relief sewer (north to south flow) or a force main (south to north flow). Based on wet weather flow modeling work completed to date, discharges from the wet weather facilities may be reduced by operating the PS Q force main as a gravity sewer with relatively minor modifications. Construction began in FY17 and is expected to be completed in FY20.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
PS Q FM Dual-Mode Operation	15,308,000	0	0	15,308,000

Appropriations:			
Prior Years	\$ 15,308,000	Lead Dept:	WAS
2020	\$ 0	Recurring:	No
2021	\$ 0	Funding:	BOND/REV100%
2022	\$ 0		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 0		
Total Cost	\$ 15,308,000	In Service Date:	31-Dec-19

### Capital Improvement Program - Project Summary

**Project:** Plant Pipe Replacement

**Project Number:** 000959

**Strategy:** Maintaining Infrastructure

**Program:** WW Infrastructure Program

**Justification:**

Regular replacement of piping systems is necessary to prevent failures that could require extended shutdowns and impact the District's ability to properly chlorinate wastewater and comply with the National Pollutant Discharge Elimination System permit requirements.

**Description:**

This project provides cyclical replacement of piping systems that are critical to the operation of the Main Wastewater Treatment Plant. The first phase, completed in FY17, included repair or replacement of sodium hypochlorite distribution piping. The second phase, scheduled for FY18-23, includes replacement of sodium hypochlorite piping within the storage area and at individual feed points. Assessment of the Secondary Reactor Piping is scheduled for FY21-22.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
MWWTP Hypo Pipe Replace Ph 2	2,658,012	4,538,000	0	7,196,012
Secondary Clarif RAS Pipe Insp	0	143,000	0	143,000

Appropriations:		Lead Dept: WAS	
Prior Years	\$ 7,178,000	Recurring: No	
2020	\$ 4,538,000	Funding: BOND/REV 100%	
2021	\$ 143,000		
2022	\$ 0		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 0	In Service Date: 31-Dec-23	
<b>Total Cost</b>	<b>\$ 11,859,000</b>		

### Capital Improvement Program - Project Summary

**Project:** Procure Emerg Response Equipmt **Project Number:** 000392

**Strategy:** Maintaining Infrastructure **Program:** WW Infrastructure Program

**Justification:**

This project is necessary to provide emergency backup equipment to ensure employee safety, public health, and the maintenance of critical operations following an emergency or disaster, such as an earthquake.

**Description:**

This is an ongoing project for the procurement of emergency response equipment including pumps, pipes, fittings, trailers, generators, traffic control equipment, communications equipment, and storage containers for emergency pumping and bypassing of pump stations to ensure timely emergency response in a disaster.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Emergency Response Equipment	1,875,000	0	0	1,875,000

Appropriations:			
Prior Years	\$ 1,875,000	Lead Dept:	WAS
2020	\$ 0	Recurring:	No
2021	\$ 0	Funding:	BOND/REV100%
2022	\$ 0		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 0		
Total Cost	\$ 1,875,000	In Service Date:	31-Dec-30

### Capital Improvement Program - Project Summary

**Project:** Pump Station A Improvements

**Project Number:** 2009792

**Strategy:** Maintaining Infrastructure

**Program:** WW Infrastructure Program

**Justification:**

Pump rehabilitation is required to continue to provide reliable service. Improved access is needed for personnel safety.

**Description:**

This project includes mechanical and electrical upgrades to Pump Station A in Albany. The mechanical work includes the investigation of pump station hydraulics, refurbishing the ventilation system, replacing/repairing the influent isolation gate, and upgrading the sump and main pumps. The electrical and instrumentation work includes replacing equipment in the wet well and upgrading switches, alarms, and displays. Other work includes investigating the wet well concrete condition, improving site access conditions, and upgrading stairs to access below grade infrastructure. This work is scheduled for FY25-27.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Pump Station A Improvements	0	0	0	0

Appropriations:		Lead Dept: WAS	
Prior Years	\$ 0	Recurring: No	
2020	\$ 0	Funding: BOND/REV 100%	
2021	\$ 0		
2022	\$ 0		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 0	In Service Date: 31-Dec-27	
<b>Total Cost</b>	<b>\$ 0</b>		

### Capital Improvement Program - Project Summary

**Project:** Pump Station C Upgrades

**Project Number:** 1006000

**Strategy:** Maintaining Infrastructure

**Program:** WW Infrastructure Program

**Justification:**

The dry weather pumps have no standby capacity, and inadequate ventilation can cause excessive equipment corrosion. Chemical flow monitoring is needed for effective monitoring. A wet well isolation gate is needed to take the wet well out of service.

**Description:**

This project increases the reliability of Pump Station C in Alameda by implementing improvements identified in the Pump Station Master Plan. Improvements include replacing the dry weather submersible pumps to double the capacity, improving ventilation in the dry weather wet well and chemical storage vault, and other upgrades to increase reliability and safety. This work is scheduled for FY25-27.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Pump Station C Upgrades	1,864,000	0	0	1,864,000

Appropriations:			
Prior Years	\$ 1,864,000	Lead Dept:	WAS
2020	\$ 0	Recurring:	No
2021	\$ 0	Funding:	BOND/REV100%
2022	\$ 0		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 0		
Total Cost	\$ 1,864,000	In Service Date:	30-Jun-27

Capital Improvement Program - Project Summary					
<b>Project:</b> Pump Station H Imprvmts		<b>Project Number:</b> 001352			
<b>Strategy:</b> Maintaining Infrastructure		<b>Program:</b> WW Infrastructure Program			
<b>Justification:</b> Pump Station H is the largest pump station and is critical to maintain in reliable operating condition. The pumps and drives require periodic rehabilitation to meet current standards.					
<b>Description:</b> This project will increase the reliability of Pump Station H in Oakland by implementing improvements identified in the Pump Station Master Plan and a criticality assessment. The project will be implemented in two phases.  Phase 1 is complete. It replaced all of the mechanical, electrical, and instrumentation equipment that was no longer cost-effective to maintain or did not meet operational standards. The main pumps and discharge piping will be replaced under Phase 2. Design and construction of Phase 2 is scheduled for FY26-28.					
<b>Key Segments &amp; Appropriations</b>		<b>Prior Yrs</b>	<b>FY20-24</b>	<b>Future Yrs</b>	<b>Total</b>
Pump Station H Imprvmts Ph 2		0	0	0	0
<b>Appropriations:</b>		<b>Lead Dept:</b> WAS <b>Recurring:</b> No			
Prior Years	\$ 6,134,000				
2020	\$ 0	<b>Funding:</b> BOND/REV 100%			
2021	\$ 0				
2022	\$ 0				
2023	\$ 0				
2024	\$ 0				
Future Years	\$ 0	<b>In Service Date:</b> 31-Dec-27			
<b>Total Cost</b>	<b>\$ 6,134,000</b>				

Capital Improvement Program - Project Summary					
<b>Project:</b> Pump Station J Upgrades		<b>Project Number:</b> 1006001			
<b>Strategy:</b> Maintaining Infrastructure		<b>Program:</b> WW Infrastructure Program			
<b>Justification:</b> Pump rehabilitation is required to continue to provide reliable wet weather pumping capacity. System alarms and improved access are needed for personnel safety. Remote telemetry is needed for improved monitoring.					
<b>Description:</b> This project increases the reliability of Pump Station J in Oakland by implementing improvements identified in the Pump Station Master Plan. Improvements include ventilation fan replacement, access improvements, and adding Distributed Control System monitoring. Design and construction is planned for FY24-26.					
<b>Key Segments &amp; Appropriations</b>		<b>Prior Yrs</b>	<b>FY20-24</b>	<b>Future Yrs</b>	<b>Total</b>
Pump Station J Improvements		0	4,250,000	0	4,250,000
<b>Appropriations:</b>		<b>Lead Dept:</b> WAS			
Prior Years	\$ 0				
2020	\$ 0	<b>Recurring:</b> No			
2021	\$ 0				
2022	\$ 0	<b>Funding:</b> BOND/REV 100%			
2023	\$ 0				
2024	\$ 4,250,000	<b>In Service Date:</b> 31-Dec-26			
Future Years	\$ 0				
<b>Total Cost</b>	<b>\$ 4,250,000</b>				

### Capital Improvement Program - Project Summary

**Project:** Pump Station L Improvement

**Project Number:** 2005285

**Strategy:** Maintaining Infrastructure

**Program:** WW Infrastructure Program

**Justification:**

The equipment is reaching the end of its useful life and additional remote monitoring telemetry is needed to improve monitoring.

**Description:**

This project increases the reliability of Pump Station L in Oakland by implementing improvements identified in the Pump Station Master Plan. Improvements include replacement of all mechanical and electrical equipment. Implementation is scheduled for FY20-22.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Pump Station L Imprv	1,490,000	0	0	1,490,000

Appropriations:			
Prior Years	\$ 1,490,000	Lead Dept:	WAS
2020	\$ 0	Recurring:	No
2021	\$ 0	Funding:	BOND/REV100%
2022	\$ 0		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 0		
Total Cost	\$ 1,490,000	In Service Date:	31-Dec-21



Capital Improvement Program - Project Summary					
<b>Project:</b> Pump Station M Imprvmnts		<b>Project Number:</b> 001372			
<b>Strategy:</b> Maintaining Infrastructure		<b>Program:</b> WW Infrastructure Program			
<b>Justification:</b> Electrical equipment is located below grade and is susceptible to failure if flooded. Improved access is needed for personnel safety. Additional remote monitoring telemetry is needed to improve monitoring.					
<b>Description:</b> This project increases the reliability of Pump Station M in Alameda by implementing improvements identified in the Pump Station Master Plan. Improvements include replacing the pumps with dry-pit submersible pumps and piping modifications; upgrading the ventilation system and odor controls; replacing electrical equipment; adding a programmable logic controller and software; modifying below grade access; and adding a restroom. Construction of these improvements will take place in FY18-22.					
<b>Key Segments &amp; Appropriations</b>		<b>Prior Yrs</b>	<b>FY20-24</b>	<b>Future Yrs</b>	<b>Total</b>
Pump Station M Improvements		5,898,000	1,200,000	0	7,098,000
<b>Appropriations:</b>		<b>Lead Dept:</b> WAS <b>Recurring:</b> No			
Prior Years	\$ 5,898,000				
2020	\$ 1,200,000	<b>Funding:</b> ERF 100%			
2021	\$ 0				
2022	\$ 0				
2023	\$ 0				
2024	\$ 0				
Future Years	\$ 0	<b>In Service Date:</b> 31-Dec-22			
<b>Total Cost</b>	<b>\$ 7,098,000</b>				

### Capital Improvement Program - Project Summary

**Project:** Pump Station Rehab and Upgrade    **Project Number:** 2005287

**Strategy:** Maintaining Infrastructure    **Program:** WW Infrastructure Program

**Justification:**

Rehabilitation of pump station equipment and structures is necessary to provide reliable service. Upgrades are needed at some pump stations to improve access and emergency operations.

**Description:**

This project includes work at multiple pump stations. Safety improvements include relocating existing or adding new exhaust fans from rooftops. New hand rails and anchor points will be installed where needed to mitigate potential fall hazards associated with the existing roof-mounted ventilation systems. Emergency operation upgrades include installation of bypass systems to help avoid sanitary sewer overflows in the event of power loss or equipment failure.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Storage Building at PS R	0	600,000	0	600,000
PS G Wet Well Liner Repair	0	60,000	0	60,000
Pump Station Bypass Piping Upg	0	0	0	0

Appropriations:		Lead Dept: WAS	
Prior Years	\$ 181,000	Recurring: No	
2020	\$ 0	Funding: BOND/REV 100%	
2021	\$ 60,000		
2022	\$ 600,000		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 0	In Service Date: 30-Jun-27	
<b>Total Cost</b>	<b>\$ 841,000</b>		

### Capital Improvement Program - Project Summary

**Project:** Resource Recovery Project

**Project Number:** 1004872

**Strategy:** Maintaining Infrastructure

**Program:** WW Infrastructure Program

**Justification:**

This project will provide infrastructure for the acceptance of trucked waste that will continue to generate revenues through tipping fees and power sales from converting excess biogas to electricity.

**Description:**

The Resource Recovery (R2) program was developed to accept a variety of solid and liquid wastes delivered by truck to the Main Wastewater Treatment Plant. This project includes studies and capital improvements to support the program. Numerous improvements to the R2 facilities have already been implemented under this project.

Planned upgrades in FY20-24 include improvements to the existing Solid/Liquid Waste Receiving Station and the new Blend Tank Receiving Station. These improvements will result in reduced odors, enhanced monitoring, and the ability to accept additional high-strength waste.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
R2 Odor Grit & Misc Improv	5,551,000	5,137,000	0	10,688,000
R2 S/L Waste Tanks Concrete	1,280,000	0	0	1,280,000
SLW Receiving Station Improve	1,250,000	0	0	1,250,000
R2 S/L Waste Tanks 1-2 Coating	0	1,250,000	0	1,250,000
High Brine Waste Storage Tank	0	1,137,000	0	1,137,000
R2 IS Automation Monitoring	0	300,000	0	300,000
Dewatering Expansion	0	200,000	0	200,000

Appropriations:		Lead Dept: WAS	
Prior Years	\$ 36,837,587	Recurring: No	
2020	\$ 5,637,000	Funding: BOND/REV 100%	
2021	\$ 0		
2022	\$ 2,387,000		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 0	In Service Date: 31-Dec-24	
<b>Total Cost</b>	<b>\$ 44,861,587</b>		

### Capital Improvement Program - Project Summary

**Project:** Routine Cap Equip Replacement

**Project Number:** 000943

**Strategy:** Maintaining Infrastructure

**Program:** WW Infrastructure Program

**Justification:**

The programmatic repair and replacement of equipment maximizes equipment availability to ensure continued permit compliance.

**Description:**

Work includes repair and replacement of equipment throughout the wastewater system such as valves, piping, electrical systems, instrumentation components, and communications equipment.

Projects identified for FY20-24 include rebuilding numerous pumps, motors, and other equipment. In FY20-21, it also includes identification and prioritization of coating repairs for equipment at the Main Wastewater Treatment Plant, pump stations, and wet weather facilities.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Capital Equipment Replacement	31,114,249	12,500,000	12,500,000	56,114,249
Coating Rehab Project	1,500,000	0	0	1,500,000

Appropriations:			
Prior Years	-	Lead Dept:	WAS
2020	\$ 2,500,000	Recurring:	Yes
2021	\$ 2,500,000	Funding:	ERF100%
2022	\$ 2,500,000		
2023	\$ 2,500,000		
2024	\$ 2,500,000		
Future Years	-		
Total Cost	-	In Service Date:	Recurring

## Capital Improvement Program - Project Summary

**Project:** Seismic Retrofits

**Project Number:** 2012929

**Strategy:** Maintaining Infrastructure

**Program:** WW Infrastructure Program

**Justification:**

The Main Wastewater Treatment Plant (MWWTP) is located in a seismic hazard zone. Several facilities were constructed prior to building code changes and have been identified as not meeting current seismic codes. Without improvements, damage may occur throughout the MWWTP in the event of a major earthquake.

**Description:**

This project includes prioritized seismic retrofits based on the 2018 MWWTP Seismic Evaluation Update Project. Near-term work includes improved bracing and supports for electrical distribution lines and improved unit anchorage for substations throughout the MWWTP. Long-term retrofits include the addition of perimeter foundations, micro piles and caps; buttress walls; concrete wall and steel braced frame modifications; new concrete beams; new exterior veneer; and other improvements to various structures at the MWWTP.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Seismic Retrofit IPS	0	22,000,000	0	22,000,000
Seismic Retrofit Maint Center	0	14,800,000	0	14,800,000
Seismic Retro Pwr Dist Sys	0	4,050,000	0	4,050,000
Seismic Evaluation of MWWTP	555,000	834,000	0	1,389,000

Appropriations:			
Prior Years	\$ 0	Lead Dept:	WAS
2020	\$ 4,884,000	Recurring:	No
2021	\$ 0	Funding:	BOND/REV 100%
2022	\$ 0		
2023	\$ 0		
2024	\$ 36,800,000		
Future Years	\$ 0		
Total Cost	\$ 41,684,000	In Service Date:	31-Dec-29

## Capital Improvement Program - Project Summary

**Project:** Treatment Plant Infra Ph 2

**Project Number:** 2009787

**Strategy:** Maintaining Infrastructure

**Program:** WW Infrastructure Program

**Justification:**

Replace or rehabilitate equipment, structures and support systems that are reaching the end of their design lives or do not provide the level of service necessary to maintain compliance with the Main Wastewater Treatment Plant (MWWTP) National Pollutant Discharge Elimination System permit, safe working conditions and reliable, cost-effective treatment.

**Description:**

This project provides for the cyclical replacement and rehabilitation of various treatment process facilities at the MWWTP.

Work planned in FY20-24 includes improvements to plant gallery drains; upgrades to the security system; improvements to the East Gate Undercrossing; replacement of grit handling equipment; and improvements to the Administration and Operations Buildings.

Work planned in FY25-29 includes additional improvements to plant gallery drains; replacing aging motors and variable frequency drives for the main pumps at the Influent Pump Station and the Effluent Pump Station; and replacing fire protection systems.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
IPS Main Pump Improvements	63,000	21,280,000	0	21,343,000
Grit Handling Eqpmt Rplcmt	8,104,000	7,059,000	0	15,163,000
O2 Plant RHX & Cntrl Sys Rplc	0	10,879,000	0	10,879,000
Plant Gallery Drains	4,909,000	5,600,000	0	10,509,000
Clarifier Weir Leveling Improv	0	7,051,000	0	7,051,000
MWWTP Admin Bldg Improvements	1,801,000	4,299,000	0	6,100,000
Ops Center Improvements	1,648,000	3,201,000	0	4,849,000
Plant Drain Sys Improvements	0	3,710,000	0	3,710,000

Appropriations:		Lead Dept: WAS	
Prior Years	\$ 20,379,000	Recurring: No	
2020	\$ 14,410,000	Funding: BOND/REV 100%	
2021	\$ 21,818,000		
2022	\$ 6,422,000		
2023	\$ 27,251,000		
2024	\$ 0		
Future Years	\$ 0	In Service Date: 30-Jun-30	
<b>Total Cost</b>	<b>\$ 90,280,000</b>		

## Capital Improvement Program - Project Summary

**Project:** Treatment Plant Infrastructure

**Project Number:** 000932

**Strategy:** Maintaining Infrastructure

**Program:** WW Infrastructure Program

**Justification:**

Replace or rehabilitate equipment, structures and support systems that are reaching the end of their design lives or do not provide the level of service necessary to maintain compliance with the Main Wastewater Treatment Plant (MWWTP) National Pollutant Discharge Elimination System permit, safe working conditions and reliable, cost-effective treatment.

**Description:**

This project provides for the cyclical replacement and rehabilitation of various treatment process facilities at the MWWTP.

Improvements planned in FY20-24 include replacement of large variable frequency drives; replacement of influent screens; repair or replacement of flow meters; paving; rehabilitation of the secondary clarifiers; reactor piping condition assessment and the installation of a plant-wide intercom system.

Improvements planned in FY25-29 include rehabilitation of the remaining clarifiers along with the installation of online total suspended solids monitors.

This project also includes engineering support for urgent capital projects and preparation and maintenance of record drawings.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Sec Clarifier Mech Rehab Ph 2	0	5,623,000	11,002,000	16,625,000
WW Fac Records Documentation	6,802,000	2,949,000	3,504,000	13,255,000
Urgent Capital Projects	4,972,000	2,550,000	3,050,000	10,572,000
Reactor Piping Condition Asses	925,000	3,675,000	3,075,000	7,675,000
MWWTP 3W System Improvements	0	7,281,000	0	7,281,000
MWWTP Influent Screen Repl	4,146,000	1,700,000	0	5,846,000
Large VFD Replacement	2,968,000	0	0	2,968,000
MWWTP Intercom Paging Sys Upgr	1,637,000	1,250,000	0	2,887,000

Appropriations:		Lead Dept: WAS	
Prior Years	\$ 56,415,300	Recurring: No	
2020	\$ 8,522,000	Funding: BOND/REV 100%	
2021	\$ 13,963,000		
2022	\$ 5,646,000		
2023	\$ 1,140,000		
2024	\$ 1,381,000		
Future Years	\$ 21,131,000	In Service Date: 31-Dec-35	
<b>Total Cost</b>	<b>\$ 108,198,300</b>		

### Capital Improvement Program - Project Summary

**Project:** Vehicle & Equip Additions, WW

**Project Number:** 2003558

**Strategy:** Maintaining Infrastructure

**Program:** WW Infrastructure Program

**Justification:**

New and upgraded vehicles are required to support emergency response needs and for new field employees performing inspection and monitoring duties.

**Description:**

This project provides for new or upgraded vehicles to support continued operations at the Main Wastewater Treatment Plant and remote facilities. This project includes the purchase of a sedan in FY20 for use at remote facilities. This vehicle will enable staff to respond to issues at various facilities in a timely manner.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Vehicle & Equip Additions	1,237,000	27,000	0	1,264,000

Appropriations:		Lead Dept: WAS	
Prior Years	\$ 1,237,000	Recurring: No	
2020	\$ 27,000	Funding: BOND/REV 100%	
2021	\$ 0		
2022	\$ 0		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 0	In Service Date: 30-Jun-22	
<b>Total Cost</b>	<b>\$ 1,264,000</b>		



### Capital Improvement Program - Project Summary

**Project:** WW Energy Management

**Project Number:** 1002730

**Strategy:** Maintaining Infrastructure

**Program:** WW Infrastructure Program

**Justification:**

Energy is a significant portion of the operating costs at the Main Wastewater Treatment Plant (MWWTP). Improved energy management provides opportunities to improve efficiency and reduce costs.

**Description:**

The goal of this project is to improve energy efficiency at the MWWTP and to maximize the production of biogas used to generate renewable energy. The Wastewater Energy System Master Plan provides the basis for prioritizing energy efficiency alternatives and energy management projects.

In FY20-24, submeters will be installed at several MWWTP substations to help identify ways to increase operating efficiency and reduce energy costs. Also, a comprehensive lighting survey will be conducted to prioritize and replace lights to maximize energy savings.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Electrical Sub-Metering Data	932,000	90,000	0	1,022,000
MWWTP Lighting Improvements	155,000	90,000	0	245,000

Appropriations:				
Prior Years	\$ 2,989,748	Lead Dept:	WAS	
2020	\$ 0	Recurring:	No	
2021	\$ 0	Funding:	BOND/REV	100%
2022	\$ 180,000			
2023	\$ 0			
2024	\$ 0			
Future Years	\$ 0			
Total Cost	\$ 3,169,748	In Service Date:	31-Dec-22	

### Capital Improvement Program - Project Summary

**Project:** WW Information System Upgrades **Project Number:** 003057

**Strategy:** Maintaining Infrastructure **Program:** WW Infrastructure Program

**Justification:**

Software enhancements and applications development provide operational efficiencies and improved regulatory compliance monitoring and reporting. Hardware replacement is necessary to ensure the reliability, performance, and security of the information systems.

**Description:**

This project provides for development of Wastewater Information Systems projects, including Kratos/Lenel Replacement & CCURE Alignment, PIMS Replacement, TruckTrack Replacement, Wastewater Enterprise Resource Planning platform (Plant Operation Database), TWIST Replacement or Plant-Wide Modelling Tool, Wet Weather Billing Database, and Mobile Application Refactoring.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
WW Applications	690,641	2,981,000	0	3,671,641

Appropriations:		Lead Dept: WAS	
Prior Years	\$ 2,160,000	Recurring: No	
2020	\$ 2,981,000	Funding: BOND/REV 100%	
2021	\$ 0		
2022	\$ 0		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 0	In Service Date: 31-Dec-24	
<b>Total Cost</b>	<b>\$ 5,141,000</b>		

## Capital Improvement Program - Project Summary

**Project:** Wet Weather Plant Imprmts

**Project Number:** 000657

**Strategy:** Regulatory Compliance

**Program:** WW Regulatory Compliance

**Justification:**

This project is necessary to ensure compliance with the District's National Pollutant Discharge Elimination System Wet Weather Permit by reducing the risk of chemical piping failures.

**Description:**

This project addresses upgrades at the Wet Weather Treatment Facilities (WWFs) to maintain reliable operations. It includes electrical and chemical system improvements at the WWFs at Point Isabel in Richmond, and at Oakport and San Antonio Creek in Oakland.

Instrumentation upgrades at Point Isabel are scheduled for FY20-21, and concrete rehabilitation and liner repairs at Point Isabel and Oakport are scheduled for FY22-25. New washdown monitors/water cannons will be installed at Point Isabel in FY23-24.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
PT Isabel Remote I/O Ctrl Add	1,200,000	0	0	1,200,000
Pt Isabel WWF Concrete Rehab	0	758,000	0	758,000
Oakport Concrete Rehab	0	550,000	0	550,000
Remote Facility Main Brkr Repl	0	525,000	0	525,000
Pt Isabel WWF Water Cannon Rpl	0	373,000	0	373,000
Pt Isabel PS N Wet Well Liner	0	300,000	0	300,000
Oakport WWF Chemical Tank Rehb	0	295,000	0	295,000

Appropriations:		Lead Dept: WAS	
Prior Years	\$ 9,267,000	Recurring: No	
2020	\$ 820,000	Funding: BOND/REV 100%	
2021	\$ 0		
2022	\$ 923,000		
2023	\$ 1,058,000		
2024	\$ 0		
Future Years	\$ 0	In Service Date: 31-Dec-25	
<b>Total Cost</b>	<b>\$ 12,068,000</b>		

### Capital Improvement Program - Project Summary

**Project:** Camanche WTP Improvement

**Project Number:** 1000797

**Strategy:** Water Supply

**Program:** Supply Reservoirs

**Justification:**

The Interim Enhanced Surface Water Treatment Rule requires a higher level of water treatment than that currently provided by the Camanche South and North Shore Water Treatment Plants.

**Description:**

This project will replace the Camanche South Shore Recreation Area water treatment plant with a 0.5 million gallon per day (MGD) water treatment plant that meets Department of Public Health regulations.

The existing plant has reached the end of its useful life and the new plant will be completed in FY20.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Cam So Shore WTP Repl	7,519,000	0	0	7,519,000

Appropriations:			
Prior Years	\$ 7,519,000	Lead Dept:	WOD
2020	\$ 0	Recurring:	No
2021	\$ 0	Funding:	BOND/REV100%
2022	\$ 0		
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 0		
Total Cost	\$ 7,519,000	In Service Date:	30-Jun-21

### Capital Improvement Program - Project Summary

**Project:** Distrib Sys Wtr Quality Imprv

**Project Number:** 000919

**Strategy:** Water Quality

**Program:** Water Quality Improvement

**Justification:**

Improvements to the distribution system are necessary to address water quality issues.

**Description:**

This project provides ongoing improvements related to water quality in the distribution system which is composed of over 4,100 miles of pipeline and 165 reservoirs.

In FY20, four variable frequency drives at the Skywest Pump Station will be replaced to provide for 100% readiness of the shared Hayward Intertie facility.

In FY20-22, chloramine boosting stations and UV treatment systems will be installed at distribution reservoirs, along with the installation of electrical or hydraulic mixers at the rate of one per year to improve water quality by controlling trihalomethanes (THMs).

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Distrib Sys Imps - Water Qual	5,960,746	0	0	5,960,746
Chloramine Boosting Stations	3,316,000	850,000	0	4,166,000
Dynamic Sect Leak Support	1,216,000	0	0	1,216,000
Pilot Treatment Plant Relocate	0	1,000,000	0	1,000,000
Reservoir Mixing System	320,000	600,000	0	920,000
Hayward Intertie Improvements	0	0	0	0

Appropriations:			
Prior Years	-	Lead Dept:	WOD
2020	\$ 1,200,000	Recurring:	Yes
2021	\$ 200,000	Funding:	BOND/REV 100%
2022	\$ 1,050,000		
2023	\$ 0		
2024	\$ 0		
Future Years	-		
Total Cost	-	In Service Date:	Recurring

### Capital Improvement Program - Project Summary

**Project:** Enhanced Power Revenue

**Project Number:** 1002593

**Strategy:** Water Supply

**Program:** Supply Reservoirs

**Justification:**

Developing cost-effective renewable generation and improving energy efficiency to reduce the District's reliance on energy purchases and greenhouse gas emissions supports the District's Energy Policy.

**Description:**

This project provides ongoing support for the District's goal to develop renewable generation projects or purchase renewable energy to reduce indirect greenhouse gas emissions to zero and direct emissions by 50% by 2040. The project also supports efforts to fund efficiency projects that directly reduce energy consumption.

A 325 kW PV project at the North Richmond Water Reclamation Plant was completed in FY 18, and the 380kW PV project at Camanche Dam will be complete in FY19.

In FY19-20, two large PV projects totaling up to 8 MW on the District's watershed land will be pursued with efforts directed at PG&E interconnection, environmental review and permitting and approvals from the City or County.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Briones Hydro Project	1,377,610	1,500,000	0	2,877,610
Large Scale PV	1,750,000	0	0	1,750,000
Advanced Metering Project	50,000	100,000	0	150,000

Appropriations:				
Prior Years	-	Lead Dept:	WOD	
2020	\$ 20,000		Recurring:	Yes
2021	\$ 20,000	Funding:		BOND/REV
2022	\$ 20,000		GRANTS	19%
2023	\$ 1,520,000			
2024	\$ 20,000			
Future Years	-		In Service Date:	Recurring
Total Cost	-			

Capital Improvement Program - Project Summary					
<b>Project:</b> Minor WTP Capital Work		<b>Project Number:</b> 2003502			
<b>Strategy:</b> Water Quality		<b>Program:</b> Water Treatment Upgrade			
<b>Justification:</b> Each year various relatively low-cost improvements and modifications to existing water treatment plants are required. Most involve equipment or structural problems impacting facility integrity, or health and safety issues.					
<b>Description:</b> This project consists of low-cost capital improvements to existing facilities that do not require extensive planning or design, or justify a stand alone project. This project may also address small infrastructure improvements that were unanticipated but are critical for Water Treatment Plant (WTP) operations.  Work in FY20-24 includes replacement of two 36-inch butterfly valves at the wash water basins, re-coating of the solids handling ponds, purchase of new filter valves, and improvements to the ammonia feed system at Orinda WTP; new variable frequency drive controllers for all chemical pumps at Sobrante WTP; replacement of both sedimentation isolation gates at Sobrante WTP; replenish filter media at Upper San Leandro WTP; and new chemical metering pumps and online equipment at various WTPs.					
<b>Key Segments &amp; Appropriations</b>		<b>Prior Yrs</b>	<b>FY20-24</b>	<b>Future Yrs</b>	<b>Total</b>
WTP Capital Improvements		4,541,931	2,567,000	5,432,000	12,540,931
<b>Appropriations:</b>		<b>Lead Dept:</b> WOD <b>Recurring:</b> Yes			
Prior Years	-				
2020	\$ 0	<b>Funding:</b> BOND/REV 100%			
2021	\$ 610,000				
2022	\$ 630,000				
2023	\$ 652,000				
2024	\$ 675,000				
Future Years	-	<b>In Service Date:</b> Recurring			
<b>Total Cost</b>	-				

### Capital Improvement Program - Project Summary

**Project:** Pardee Ctr Cap Maint & Imprvmt

**Project Number:** 2001367

**Strategy:** Water Supply

**Program:** Supply Reservoirs

**Justification:**

Projects address regulatory compliance and reliability issues pertaining to water, wastewater and building systems; life cycle replacement of pumps, system valves and instruments; and ensure the safety of employees and guests.

**Description:**

This project provides for replacement and improvements to the Pardee Center Water Treatment Plant, Wastewater Treatment Plant, potable water system, collection system piping, buildings and grounds, roads, conference center, chemical plant and aqueduct control infrastructure to ensure safe and reliable systems that comply with regulatory requirements.

FY20-30 work includes replacement of power poles; replacement of siding, flooring, HVAC systems and porch tile on several buildings; purchase of a storage building for the vactor; exterior painting of the warehouse and shops; rehabilitation of the elevated fire water tank; replacement of the Pardee Ridge emergency generator; and replacement of the 800MHz radio system.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Water, WasteWtr Infrastructure	883,552	1,338,200	0	2,221,752

Appropriations:			
Prior Years	-	Lead Dept:	WOD
2020	\$ 321,400	Recurring:	Yes
2021	\$ 202,800	Funding:	BOND/REV 100%
2022	\$ 227,000		
2023	\$ 315,600		
2024	\$ 271,400		
Future Years	-		
Total Cost	-	In Service Date:	Recurring



Capital Improvement Program - Project Summary					
<b>Project:</b> Powerhouse Improvements		<b>Project Number:</b> 2001368			
<b>Strategy:</b> Water Supply		<b>Program:</b> Supply Reservoirs			
<b>Justification:</b> System improvements are critical to avoid non-compliance of current and new regulations, and parameters mandated by various regulatory agencies such as the Bureau of Reclamation (river flows), the Federal Energy Regulatory Commission (reservoirs and dams), and the California ISO (power marketing).					
<b>Description:</b> This project provides for replacement and improvements for reliable power production, management of river flows, and remote operation and monitoring of critical systems by the Pardee Area Control Center.  FY20-24 work consists of purchasing a Vanguard CT8000 timing test set and time travel analyzer; upgrading a generator and programmable logic controller; replacing piping and valves; overhauling a turbine; upgrading a lube oil system and transformer, replacing relays, disconnect switches, and oil-filled circuit breakers; installing digital fault recorders; and upgrading instrumentation.					
<b>Key Segments &amp; Appropriations</b>		<b>Prior Yrs</b>	<b>FY20-24</b>	<b>Future Yrs</b>	<b>Total</b>
Pardee Powerhouse		5,667,068	478,700	0	6,145,768
Camanche PH Electrical Imprv		0	3,700,000	0	3,700,000
Camanche Powerhouse		3,229,463	353,000	0	3,582,463
CPH Unit 3 Overhaul		0	640,000	0	640,000
CPH Unit 1 Overhaul		0	600,000	0	600,000
FSCC Capital Improvements		0	250,000	0	250,000
PPH Unit 3 Turbine Overhaul		0	0	0	0
CPH Unit 2 Overhaul		0	0	0	0
<b>Appropriations:</b>		<b>Lead Dept:</b> WOD <b>Recurring:</b> Yes  <b>Funding:</b> BOND/REV 100%  <b>In Service Date:</b> Recurring			
Prior Years	-				
2020	\$ 250,000				
2021	\$ 4,428,400				
2022	\$ 25,700				
2023	\$ 937,100				
2024	\$ 380,500				
Future Years	-				
<b>Total Cost</b>	-				

Capital Improvement Program - Project Summary					
<b>Project:</b> Raw Wtr Aq O&M Imprvmts		<b>Project Number:</b> 001316			
<b>Strategy:</b> Water Supply		<b>Program:</b> Aqueduct Program			
<b>Justification:</b> Improvements are required to address deterioration of the Aqueducts and Raw Water Pumping Plant systems, and regulatory changes affecting system operations.					
<b>Description:</b> This project provides infrastructure improvements to facilitate the safe and reliable operation of the raw water aqueducts. In FY20-24, plans include improvements to raw water pipeline appurtenances, support cradles, culvert replacement, fencing and structure rehabilitation. This project also includes EBMUD monetary support of Delta Levee improvements by Reclamation Districts and other Delta area projects according to Aqueduct Levee Security Program Plans, such as the Woodward Island Bridge - a multi-agency joint project.					
<b>Key Segments &amp; Appropriations</b>		<b>Prior Yrs</b>	<b>FY20-24</b>	<b>Future Yrs</b>	<b>Total</b>
Mohe Aqued Security - Levees		23,170,668	1,500,000	0	24,670,668
Rehab Aqueduct Facilities		8,202,730	1,437,000	0	9,639,730
Freeport Region Wtr Authority		5,600,000	1,950,000	0	7,550,000
<b>Appropriations:</b>		<b>Lead Dept:</b> WOD <b>Recurring:</b> Yes			
Prior Years	-				
2020	\$ 0	<b>Funding:</b> BOND/REV 100%			
2021	\$ 600,000				
2022	\$ 972,000				
2023	\$ 2,320,000				
2024	\$ 995,000				
Future Years	-	<b>In Service Date:</b> Recurring			
<b>Total Cost</b>	-				

Capital Improvement Program - Project Summary					
<b>Project:</b> Rec Area Cap Maint & Imprvmt		<b>Project Number:</b> 2001369			
<b>Strategy:</b> Water Supply		<b>Program:</b> Supply Reservoirs			
<b>Justification:</b> This project ensures compliance with regulatory agency requirements and maintains recreation facilities in safe condition.					
<b>Description:</b> This project provides for replacement and improvements to the Water and Wastewater Treatment Plants, potable water systems, waste collection systems, dams, dikes and watershed lands at the Pardee and Camanche recreation areas. Much of the work is required to maintain regulatory compliance.  FY20-30 work includes replacing the Pardee Recreation Area Water Treatment Plant (WTP); connecting the cross lake pipeline to the Camanche North Shore system at China Gulch, along with replacing a steel bolted water tank, paving and piping; and upgrading the motor control center and replacing potable water isolation valves at the Camanche South Shore WTP.					
<b>Key Segments &amp; Appropriations</b>		<b>Prior Yrs</b>	<b>FY20-24</b>	<b>Future Yrs</b>	<b>Total</b>
Pardee/ Camanche Projects		1,993,049	1,565,100	0	3,558,149
<b>Appropriations:</b>		<b>Lead Dept:</b> WOD <b>Recurring:</b> Yes			
Prior Years	-				
2020	\$ 450,000	<b>Funding:</b> BOND/REV 100%			
2021	\$ 194,000				
2022	\$ 365,500				
2023	\$ 207,100				
2024	\$ 348,500				
Future Years	-	<b>In Service Date:</b> Recurring			
<b>Total Cost</b>	-				

### Capital Improvement Program - Project Summary

**Project:** Wtr Supply Monitoring System

**Project Number:** 000065

**Strategy:** Water Supply

**Program:** Supply Reservoirs

**Justification:**

Reliable and timely hydrologic, meteorologic, flow and water quality data is required to meet the operational needs of the District. Improved data quality, reliability and water supply forecasting is needed for expanded hydrologic monitoring in the East Bay and Mokelumne watershed.

**Description:**

This project provides for the development of a system for monitoring Mokelumne and East Bay Watersheds for precipitation, diversion, water flow and storage level. This monitoring system provides near real-time information for operation and forecasting plans. Work includes monitoring on the Upper and Lower Mokelumne River, and Pardee, Camanche and East Bay watersheds and reservoirs. FY20-FY30 plans include equipment and telemetry upgrades, new monitoring stations, station rehabilitation/relocation, station safety improvements and improved flow measurement capabilities during high flow events.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Res/River Inst & Monitoring	643,649	535,000	0	1,178,649

Appropriations:		Lead Dept: WOD	
Prior Years	\$ 1,857,000	Recurring: No	
2020	\$ 116,000	Funding: BOND/REV 100%	
2021	\$ 108,000		
2022	\$ 120,000		
2023	\$ 88,000		
2024	\$ 103,000		
Future Years	\$ 0	In Service Date: 30-Jun-30	
<b>Total Cost</b>	<b>\$ 2,392,000</b>		

## Capital Improvement Program - Project Summary

**Project:** Addl Supplemental Supply Projs

**Project Number:** 000460

**Strategy:** Water Supply

**Program:** Water Supply Mgmt Program

**Justification:**

This project is needed to secure supplemental water supplies and provide adequate water through 2040 to help reduce rationing requirements during a drought.

**Description:**

The Water Supply Management Program (WSMP) 2040 identifies the need for supplemental water supply projects to reliably meet dry year needs through the year 2040. The WSMP 2040 preferred portfolio includes Mokelumne Regional Projects, Regional Desalination and Water Transfers.

In FY18-19, EBMUD completed the Bay Area Regional Reliability (BARR) Drought Contingency Plan, funded in part by a grant from the U.S. Bureau of Reclamation. Working with its partners in San Joaquin County (SJC), EBMUD also completed the environmental documents and project agreements, and secured a permit for a pilot groundwater banking project. The pilot made its first deliveries in 2018. EBMUD also worked with the Contra Costa Water District (CCWD) to develop environmental documents for the Los Vaqueros Reservoir Expansion Project and supported CCWD in its successful application for State grant funding.

In FY20-21, EBMUD will evaluate whether to participate in the Los Vaqueros Expansion Project. Construction will be completed on the SJC groundwater banking pilot to extract groundwater and convey it to EBMUD's aqueduct. EBMUD will lead the BARR partners in developing a Bay Area Regional Water Market Project, funded in part by the U.S. Bureau of Reclamation.

Water Transfers include a long-term water transfer project with the Placer County Water Agency, a 5-year project with the Yuba County Water Agency, and a short-term project with Sycamore Mutual/Sac Valley Settlement Contractors.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
WSMP Special Projects	20,522,540	36,500,000	0	57,022,540
Mokelumne Regional Projects	27,210,583	0	0	27,210,583
Water Transfers	12,821,000	0	0	12,821,000
Sacramento Basin GW Banking	880,000	0	0	880,000

Appropriations:		Lead Dept: WRD	
Prior Years	\$ 110,984,777	Recurring: No	
2020	\$ 0	Funding:	BOND/REV 30%
2021	\$ 0		GRANTS 1%
2022	\$ 36,500,000		SCC 69%
2023	\$ 0		
2024	\$ 0		
Future Years	\$ 0	In Service Date: 31-Dec-30	
<b>Total Cost</b>	<b>\$ 147,484,777</b>		

## Capital Improvement Program - Project Summary

**Project:** Bayside Groundwater Project

**Project Number:** 1002726

**Strategy:** Water Supply

**Program:** Water Supply Mgmt Program

**Justification:**

This project is needed to secure supplemental water supplies and provide adequate water through 2040 to help reduce rationing requirements during a drought.

**Description:**

In addition to serving as a locally-based supplemental supply source, the project will also enable the collection of groundwater and subsidence monitoring data.

A Groundwater Monitoring Plan serves as a tool to provide the California Department of Water Resources basin water level data under the California Statewide Groundwater Elevation Monitoring (CASGEM) program requirements for mid-priority groundwater basins.

Phase 1 facilities in San Leandro consist of a 1 million gallon per day (MGD) water treatment plant, a 1 MGD injection/extraction well, and associated monitoring systems. Phase 2 facility planning efforts are not expected to begin until FY25 at the earliest.

In FY17, the District became the Groundwater Sustainability Agency for the portion of the Southeast Bay Plain (SEBP) that underlies its service area. In FY18-19, EBMUD executed a Cooperating Agreement with the City of Hayward to develop a single Groundwater Sustainability Plan (GSP) for the basin. The Department of Water Resources awarded EBMUD a \$1 million grant for GSP preparation. In FY20-21, EBMUD will work with the City of Hayward to develop a single GSP for the basin.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Bayside Phase II 10 MGD	0	0	10,000,000	10,000,000
Local Groundwater/SGMA	7,000,000	2,565,352	0	9,565,352

Appropriations:		Lead Dept:	WRD	
Prior Years	\$ 28,452,984	Recurring:	No	
2020	\$ 983,057	Funding:	BOND/REV	30%
2021	\$ 0		GRANTS	48%
2022	\$ 1,582,295		SCC	22%
2023	\$ 0			
2024	\$ 0			
Future Years	\$ 10,000,000	In Service Date:	31-Dec-30	
<b>Total Cost</b>	<b>\$ 41,018,336</b>			

## Capital Improvement Program - Project Summary

**Project:** East Bayshore

**Project Number:** 1005395

**Strategy:** Water Supply

**Program:** Water Recycling

**Justification:**

The District has set a goal of providing 20 million gallons per day (MGD) of recycled water by the year 2040, thereby offsetting the demand for potable water. This project will contribute to that goal.

**Description:**

The East Bayshore Phase 1A Project will provide 0.4 MGD of recycled water to the cities of Albany, Berkeley, Emeryville, and Oakland. A portion of Phase 1A began operating in 2008 and currently delivers 0.2 MGD of recycled water to customers in Oakland and Emeryville. The schedule for completion of Phase 1A is by FY26, including pipelines and customer retrofits. A water quality improvements study was conducted in FY18-19 to evaluate treatment improvements, and treatment improvements may be implemented in FY21-22. Also included are capital equipment replacements.

The East Bayshore Phase 1B Project will expand recycled water service in the East Bay area by an additional 0.2 MGD, for a total Phase 1A and 1B demand of 0.6 MGD. This is an estimated demand and may change due to the timing of redevelopment in the area. The timeframe for implementation is estimated at FY27-33.

The Phase 2 project, estimated at 1.7 MGD, is planned to be implemented from FY23-40. Recycled water will be provided to Alameda, Emeryville, Berkeley, and Oakland. The crossing of the estuary (slip lining of existing pipe) will be completed in FY23-24. The remainder of the facilities including expansion through Alameda, Berkeley, Emeryville, and Oakland would be completed by FY40 and include pipelines, treatment expansion, a possible booster pump station, and customer retrofits.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
East Bayshore Phase I	60,075,040	17,416,610	0	77,491,650
East Bayshore Phase II	0	9,386,000	0	9,386,000

Appropriations:		Lead Dept:	WRD	
Prior Years	\$ 60,075,040	Recurring:	No	
2020	\$ 9,674,378	Funding:	BOND/REV	30%
2021	\$ 4,004,350		SCC	70%
2022	\$ 5,515,610			
2023	\$ 7,245,858			
2024	\$ 362,414			
Future Years	\$ 0	In Service Date: 30-Jun-40		
<b>Total Cost</b>	<b>\$ 86,877,650</b>			

## Capital Improvement Program - Project Summary

**Project:** RARE Water Project

**Project Number:** 2004604

**Strategy:** Water Supply

**Program:** Water Recycling

**Justification:**

This project is required to meet the District's contractual obligation to provide high purity recycled water to the Chevron refinery in Richmond for use as boiler feedwater. In addition, this project helps the District to meet its water recycling goal of providing 20 million gallons per day (MGD) of recycled water by the year 2040.

**Description:**

Phase 1 of the Richmond Advanced Recycled Expansion (RARE) Water Project has been completed and provides 3.5 MGD of recycled water to Chevron for boiler feedwater applications to conserve the use of potable water. Facilities consist of a high-purity recycled water treatment plant at Chevron, an influent pump station, flow equalization, and a standby generator at West County. In FY20 and beyond, equipment will be replaced at the high-purity recycled water treatment plant including the microfiltration and reverse osmosis membranes. These replacements are to be funded by Chevron.

The RARE Water Project could be expanded incrementally to an additional 0.5 MGD (Phase 2) and 1.0 MGD (Future Expansion). Timing of the expansions is estimated to be FY29 and beyond depending on water supply availability.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
RARE Treatment Plant	55,304,406	0	0	55,304,406
RARE Prog Management	2,446,659	1,477,500	0	3,924,159
RARE Wtr Proj Ph2 Future Exp	3,663,000	0	0	3,663,000

Appropriations:			
Prior Years	\$ 64,802,000	Lead Dept:	WRD
2020	\$ 0	Recurring:	No
2021	\$ 135,000	Funding:	OAG100%
2022	\$ 430,500		
2023	\$ 447,000		
2024	\$ 465,000		
Future Years	\$ 0		
Total Cost	\$ 66,279,500	In Service Date:	30-Jun-36



## Capital Improvement Program - Project Summary

**Project:** SRV Recycled Water Program

**Project Number:** 1005224

**Strategy:** Water Supply

**Program:** Water Recycling

**Justification:**

The District has set a goal of providing 20 million gallons per day (MGD) of recycled water by the year 2040, thereby offsetting the demand for potable water. This project will contribute to that goal.

**Description:**

Expansion of the Dublin San Ramon-EBMUD Recycled Water Authority (DERWA) tertiary treatment facilities from 9.7 MGD to 16.2 MGD was completed in FY19 to provide capacity as the distribution system is expanded and customers are connected. Also, additional supplemental supplies will need to be secured over the next few years to meet peak demands and future expansions.

EBMUD's portion of the San Ramon Valley (SRV) Recycled Water Program includes customer retrofits and connecting customers to the distribution system; implementation of distribution systems in San Ramon, Danville and Blackhawk; and planning/property purchase of Pump Stations 3 and 4. Phase 1 began operating in 2006 and delivers 0.5-0.7 MGD of recycled water to EBMUD customers in San Ramon.

Phase 2 distribution pipelines have been completed, and customer retrofits were completed in FY19. The Phase 3 pump station on the border between San Ramon and Danville will be completed in FY24 with distribution pipelines to be implemented in FY25. Phase 3 site retrofits will be completed in FY25-26.

Phase 5 (Blackhawk West) is anticipated to be completed in FY29. The Phase 4 pump station and pipelines in Blackhawk will be completed post FY30. Timing of all phases will be contingent on supplemental supplies.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
EBMUD/DERWA Distrib. Pipelines	41,117,956	5,456,000	0	46,573,956
DERWA/EBMUD Share of Fut Fac	11,334,146	0	0	11,334,146

Appropriations:		Lead Dept:	WRD	
Prior Years	\$ 88,392,102	Recurring:	No	
2020	\$ 0	Funding:	BOND/REV	30%
2021	\$ 0		SCC	70%
2022	\$ 5,040,000			
2023	\$ 0			
2024	\$ 416,000			
Future Years	\$ 0	In Service Date: 30-Jun-40		
<b>Total Cost</b>	<b>\$ 93,848,102</b>			

## Capital Improvement Program - Project Summary

**Project:** Water Recycling WSMP

**Project Number:** 000890

**Strategy:** Water Supply

**Program:** Water Recycling

**Justification:**

The District's Water Supply Management Program (WSMP) has set a goal of providing 20 million gallons per day (MGD) of recycled water by the year 2040, thereby offsetting the demand for potable water. These projects will contribute to the goal.

**Description:**

The Master Plan was updated in FY18-19. This project consists of: (1) updating the master plan every 5 years; (2) coordinating the implementation of customer satellite treatment plants including the Diablo Country Club in FY21 and Moraga Country Club pending customer financing; (3) further evaluation and implementation of the first phase of the Phillips 66 recycled water project in Rodeo in FY24-29; (4) rehabilitation of the San Leandro pump station project by FY27; (5) evaluation and development of potential recycled water opportunities in Contra Costa County in the long term; and (6) expansion of the recycled water truck program.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
Phillips 66 Recycled Wtr Proj	420,000	8,900,000	0	9,320,000
Contra Costa Reg'l RW Proj	4,121,380	0	0	4,121,380
San Leandro Rehabilitation	3,075,000	0	0	3,075,000
Satellite Trtmt Plant Pilot	1,556,000	0	0	1,556,000
Recycled Water Truck Program	774,000	583,258	0	1,357,258
Master Plan Update	670,000	535,973	0	1,205,973

Appropriations:				
Prior Years	\$ 16,998,105	Lead Dept:	WRD	
2020	\$ 540,004	Recurring:	No	
2021	\$ 49,800	Funding:	BOND/REV	30%
2022	\$ 2,954,897		SCC	70%
2023	\$ 415,439			
2024	\$ 6,059,091			
Future Years	\$ 0		In Service Date:	30-Jun-40
Total Cost	\$ 27,017,336			

### Capital Improvement Program - Project Summary

**Project:** No Richmond Recy Wtr Fac Impr      **Project Number:** 000876

**Strategy:** Water Supply      **Program:** Water Recycling

**Justification:**

This project is required to meet the District's contractual obligations to provide recycled water to the Chevron Richmond refinery. In addition, this project helps the District to meet its water recycling goal of providing 20 million gallons per day (MGD) of recycled water by the year 2040.

**Description:**

This project includes upgrades at the North Richmond Water Recycling Plant (NRWRP) that are needed to maintain the facility and continue to meet the District's contractual obligations to the Chevron Richmond refinery. In FY 20-24, this project will include clarifier and thickener drive replacements, polymer improvements, 1 W bypass, and other improvements.

Expansion of the NRWRP by an additional 1 MGD is expected beyond FY29 pending recycled water supply availability.

Key Segments & Appropriations	Prior Yrs	FY20-24	Future Yrs	Total
No. Richmond Improvements/Exp	4,097,677	4,541,719	0	8,639,396
NRWRP Routine Capital Maint	5,182,335	1,539,000	0	6,721,335

Appropriations:				
Prior Years	\$ 15,059,364	Lead Dept:	WRP	
2020	\$ 856,804	Recurring:	No	
2021	\$ 1,708,015	Funding:	BOND/REV	30%
2022	\$ 476,900		SCC	70%
2023	\$ 745,000			
2024	\$ 2,294,000			
Future Years	\$ 0		In Service Date:	30-Jun-40
Total Cost	\$ 21,140,083			

## FY20-24 CAPITAL IMPROVEMENT PROJECTS

PROJECT ID	PROJECT TITLE	Page #
2003554	3rd St Sewer Interceptor Rehab	78
000460	Addl Supplemental Supply Projs	126
003033	Adm Bldg Modifications	3
2003431	Almond/Fire Trail PZI	4
001210	Aqueduct Cathodic Protection	5
1002726	Bayside Groundwater Project	127
2012090	Bryant PZ Improvement Projects	6
2003491	Buildings Assessment & Improve	7
000112	CAD/CAM Mapping, Documentation	8
000153	Camanche Rec Area Upgrades	9
1000797	Camanche WTP Improvement	117
003042	Cent Oakland Hills Cascade PZI	10
000989	Centrifuge Replacement	79
2006691	Collection System Master Plan	80
1006294	Colorados Pressure Zone Imprv	11
000969	Concrete Rehab at SD1	81
001300	Contingency Project Water	54
1005995	DCS Upgrades	82
1002574	Dam Operational Upgrades	12
000861	Dam Seismic Upgrades	13
000748	Dam Surveillance Improvements	14
000363	Data & Telecom Infrastructure	55
1000800	Dechlorination Facility Impmts	83
000482	Diablo PZ Improvements	15
1002588	Diesel Engine Retrofit	59
000987	Digester Upgrade	84
000711	Dist Sys Corrosion Protection	16
000919	Distrib Sys Wtr Quality Imprv	118
000130	Distribution System Upgrades	17
000150	East Area Service Center	18
000198	East Bay Watershed Rec Projs	71

## FY20-24 CAPITAL IMPROVEMENT PROJECTS

PROJECT ID	PROJECT TITLE	Page #
1005395	East Bayshore	128
2001485	Electrical Hazard Prevention	19
2009581	Encinal Cascade PZI	20
1002593	Enhanced Power Revenue	119
2005281	Enterprise Hyd WQ & Op Modl	21
1002592	F&W Projects and Mok Hatchery	72
2003539	FIS / MMIS Replacement	56
000089	Facility Paving Project	60
1002589	Fueling Facility Upgrades	61
2003543	HRIS Replacement	57
000099	Hydrants Installed by DF	22
000570	Infiltration/Inflow Contrl Prj	85
2005283	Interceptor Corrosion Prevent	86
2011852	Lab Improvements & Equip't	87
1006298	Large Diameter Pipelines	23
2001451	Leland Pressure Zone Impr	24
000601	MWWTP Master Planning	88
000140	MWWTP Pwr Dist Sys Upgrade	89
1002575	Maloney PZ Improvements	25
000738	Meter Replacements	62
1002676	Minor Facility Improvements	63
2003502	Minor WTP Capital Work	120
2003494	Mok Aqu No 2 & 3 Relining Proj	26
2001487	Mokelumne Aqueduct Recoating	27
000158	Mokelumne Watershed Rec HQ	73
2008687	Mokelumne Watershed Rec Projs	74
001004	Motor Control Center Repl	90
000599	NPDES Compliance	91
000101	New Service Installations	28
000876	No Richmond Recy Wtr Fac Impr	132
2009794	North Interceptor Rehab	92

## FY20-24 CAPITAL IMPROVEMENT PROJECTS

PROJECT ID	PROJECT TITLE	Page #
2011022	Nutrient Management	93
000628	OP/NET System	64
000963	Odor Control Improvements	94
000241	Open Cut Reservoir Rehab	29
000985	Outfall Investigation Project	95
2001379	PGS Engine Overhaul	96
2003556	PGS Expansion	97
2006716	PS Q FM Dual-Mode Operation	98
2001367	Pardee Ctr Cap Maint & Imprvmt	121
2003500	Pardee/Cam Rec Areas Impr Plan	75
001337	Penn Mine Remediation	76
000218	Pipeline Appurtenances	65
000554	Pipeline Infrastruct Renewals	30
000108	Pipeline Relocations	31
000104	Pipeline System Extensions	32
000110	Pipeline System Improvements	33
000959	Plant Pipe Replacement	99
2001368	Powerhouse Improvements	122
001424	Pressure Zone Planning Program	34
000392	Procure Emerg Response Equipmt	100
2009792	Pump Station A Improvements	101
1006000	Pump Station C Upgrades	102
001352	Pump Station H Imprvmts	103
1006001	Pump Station J Upgrades	104
2005285	Pump Station L Improvement	105
001372	Pump Station M Imprvmts	106
2005287	Pump Station Rehab and Upgrade	107
001252	Pumping Plant Rehabilitation	35
2004604	RARE Water Project	129
1002590	Rate Control Station Rehab	36
1000810	Raw Water Studies and Improves	37

## FY20-24 CAPITAL IMPROVEMENT PROJECTS

PROJECT ID	PROJECT TITLE	Page #
001316	Raw Wtr Aq O&M Imprvmts	123
2001369	Rec Area Cap Maint & Imprvmt	124
000398	Regulator Rehabilitation	38
000716	Reservoir Rehab/Maintenance	39
000672	Reservoir Tower Modifications	40
1004872	Resource Recovery Project	108
000943	Routine Cap Equip Replacement	109
1005224	SRV Recycled Water Program	130
2001483	San Pablo Dam Seismic Mods	41
2012929	Seismic Retrofits	110
000654	Service Lateral Replacements	42
2006310	Small Capital Improvements	66
2003493	So Oakland Hills Cascades PZI	43
2001457	Summit Pressure Zone Improve	44
2001476	Tice Pumping Plant	45
003026	Trans Main Cathodic Protection	46
2009787	Treatment Plant Infra Ph 2	111
000932	Treatment Plant Infrastructure	112
000437	Treatment Plant Upgrades	47
000652	Trench Soils Storage Sites	48
2001462	USL Pressure Zone Impr	49
1000816	Upcountry WW Trmt Imprvmts	67
1005899	VA Security System Imprmts	68
000528	Veh & Hvy Equip Additions, Wtr	69
2003558	Vehicle & Equip Additions, WW	113
000526	Vehicle Replacements	70
2003498	WTTIP Distribution Improvs	50
2003499	WTTIP WTP Improvements	51
1002730	WW Energy Management	114
003057	WW Information System Upgrades	115
000894	Water Conservation Project	2

## FY20-24 CAPITAL IMPROVEMENT PROJECTS

PROJECT ID	PROJECT TITLE	Page #
2001472	Water Demand Projection Update	52
2012651	Water Loss Control	77
000890	Water Recycling WSMP	131
2001475	West of Hills Master Plan	53
000657	Wet Weather Plant Imprmts	116
2009564	Work Mgmt Systems Replacement	58
000065	Wtr Supply Monitoring System	125





EAST BAY MUNICIPAL UTILITY DISTRICT

## **FY20 & FY21 Budget Workshop #2**

Board of Directors

March 26, 2019

### **Workshop Agenda**



- Introduction
- Workshop #1 Recap
- Budget Priorities
- Recommended Budget
- Break
- Recommended Rates and Charges
- Workshop Conclusion
- Board Discussion

## Introduction

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## Workshop #1 Recap

- Reviewed progress on the long-term financial stability goals
- Presented a preliminary rate projection for FY20 & FY21
- Summarized the wastewater cost of service study
- Provided update on recent affordability for ratepayer activities

3

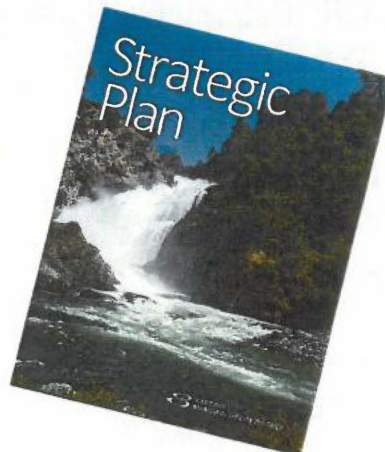
## Budget Priorities

4

## FY20 & FY21 Biennial Budget

### Budget Priorities

- Continue investments in and maintenance of aging infrastructure
- Plan for long-term financial stability



5

## Budget Priority #1



### Continue Investments in and Maintenance of Aging Infrastructure

6

## CIP Drivers and Priorities

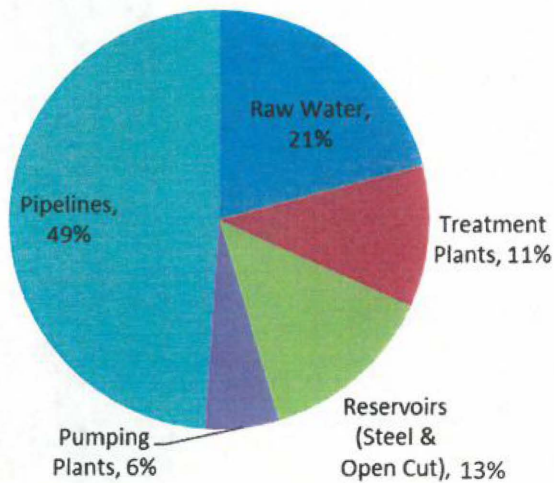


- CIP Priorities informed by plans, studies, and O&M experience
- The FY20-21 CIP will continue the District's focus on infrastructure ***renewal***
- Prioritized according to:
  1. Safety
  2. Reliability
  3. Water Quality

7

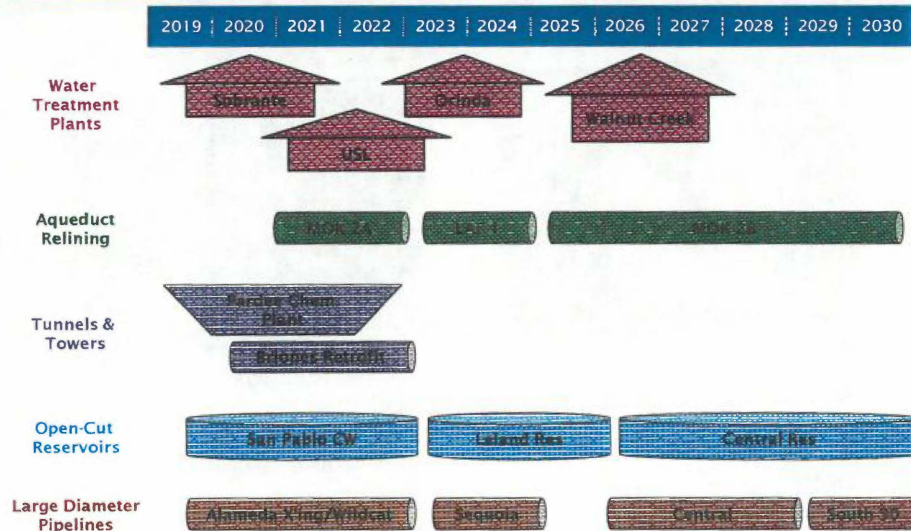


## CIP Budget by Asset Class (FY20-24)



8

## Timeline of Major Water Capital Projects



9

## Pipeline Rebuild



### Overall goals:

- Avoid main breaks and their associated costs, customer and community impacts
- Reduce water loss
- Maximize efficiency of replacements



10

## Water Loss Initiative Furthers Pipeline Rebuild Goals



### Apparent Loss



- Meter accuracy
- Unauthorized consumption
- Data transfer errors
- Data analysis errors

### Real Loss

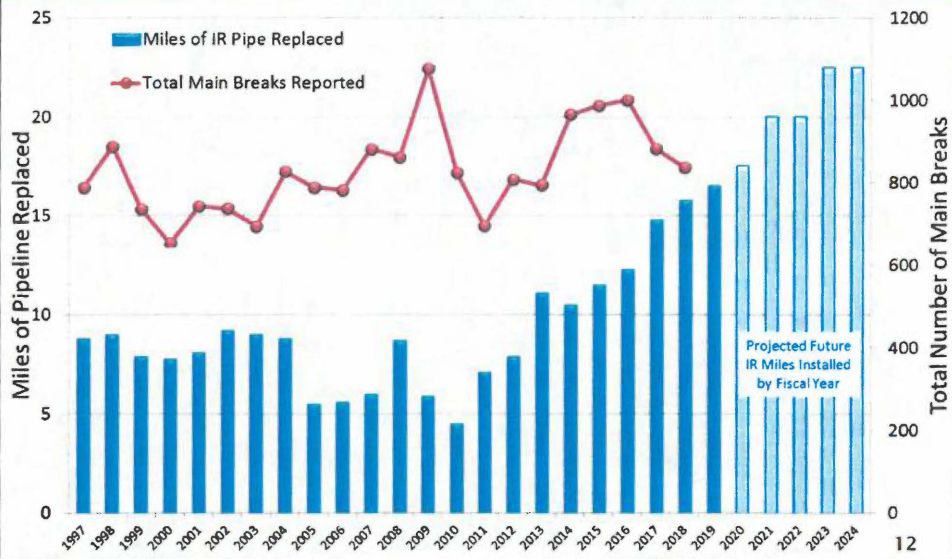


- Active leakage control
- Pressure management
- Speed and quality of repairs
- **Infrastructure management**

11



## Ramped-up Pipe Replacement



## Precise Targeting of Replacement Investments

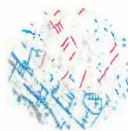


### Data Analysis

Pipe Data

Big Data

LOF



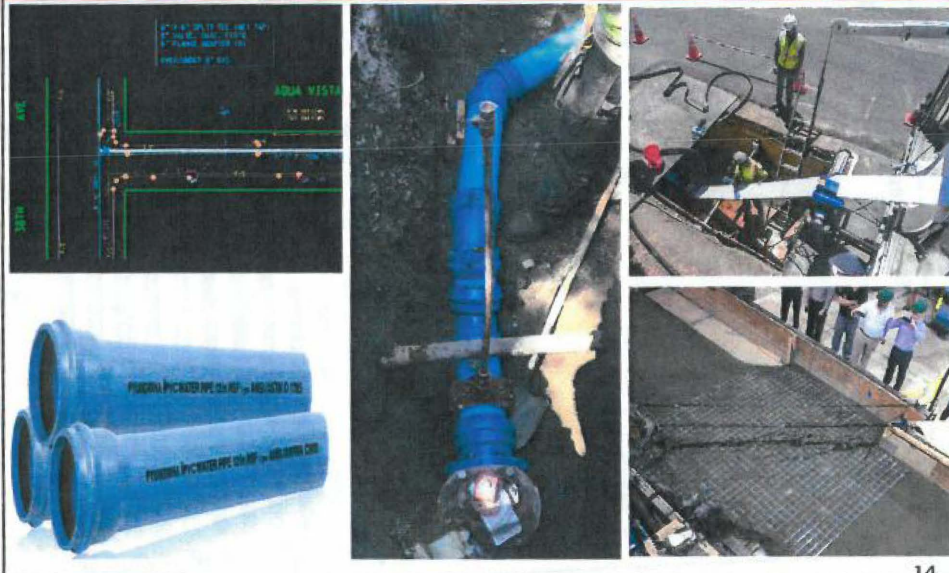
Risk

	Likelihood of Failure				
	Very Low	Low	Medium	High	Very High
Consequences of Failure	Very Low				
	Low				
	Medium				
	High				
	Very High				



Project Selections 13

## Continuous Improvement to Maximize Efficiency & Performance



14

## Data-driven Approach Informs Next Steps



### Pipeline Rebuild Project Summary

#### Almond Cluster

As of 8.30.18

Reference Project: Infrastructure Renewal  
City, Ward: Walnut Creek, Ward 2  
Legacy Pipe Material: Asbestos Cement  
Installed Pipe Material: Ductile Iron - restrained  
Joints, zinc coated (McWane TH-Flow)  
Risk Grade: Greater than 75% D and F  
Installed Pipe Size: 8"  
Total Installed Footage: 5,205 feet  
Services: 142; Hydrants: 9; Connections: 6



Statement of Problem / Description of Need

### Performance Indicators

#### Cost per foot (direct), by project phase

Construction	\$ 308
Construction Support	\$ 12
Project Support and Documentation	\$ 25
Paving	\$ 85
Total	\$ 430

Construction labor	\$ 120
Pipe and appurtenances	\$ 56
Backfill materials	\$ 19
District equipment (VUCs)	\$ 22
Rental equipment/trucks	\$ 67
Other costs incl. contractors	\$ 25

#### Productivity

Mainline labor hours per foot	0.67
Production rate per crew	94 ft per day
Service T/R per day	6.3
Hydrants per day	2.8

#### Community Impacts

Neighborhood Presence	25 weeks
Presence per 500 feet	2 weeks
Construction Workdays	76 days
Workdays per 500 feet	7 days

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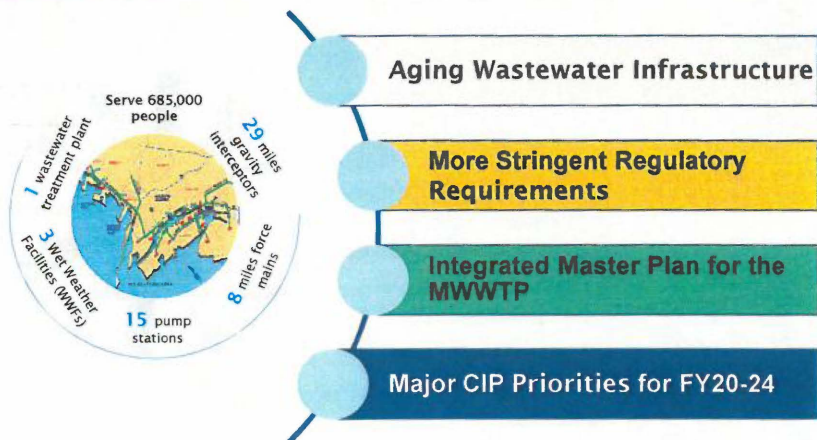
## Summary



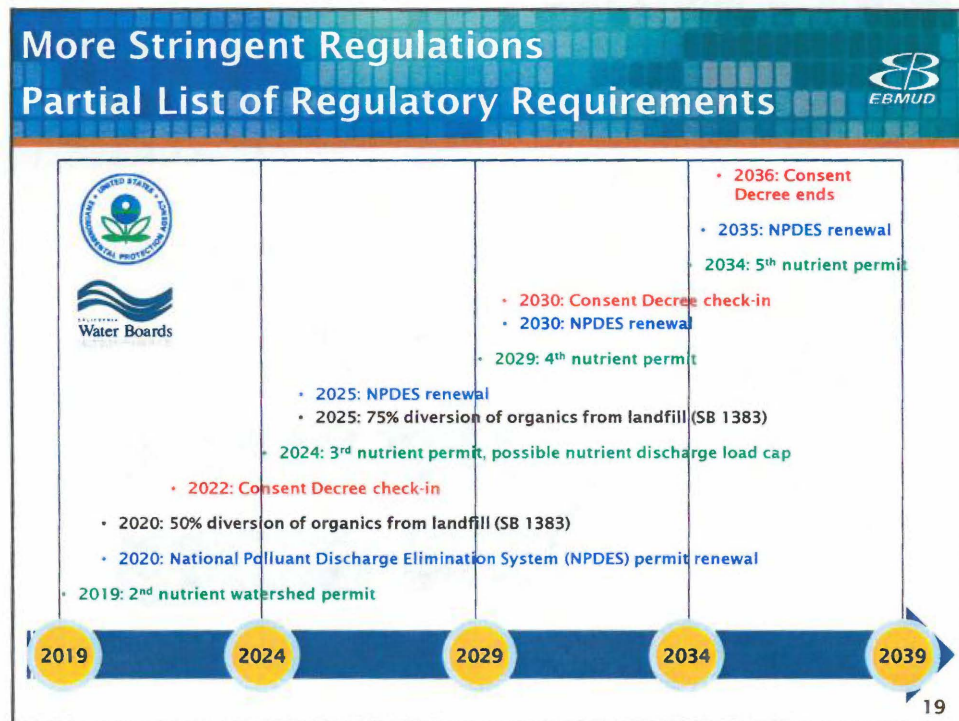
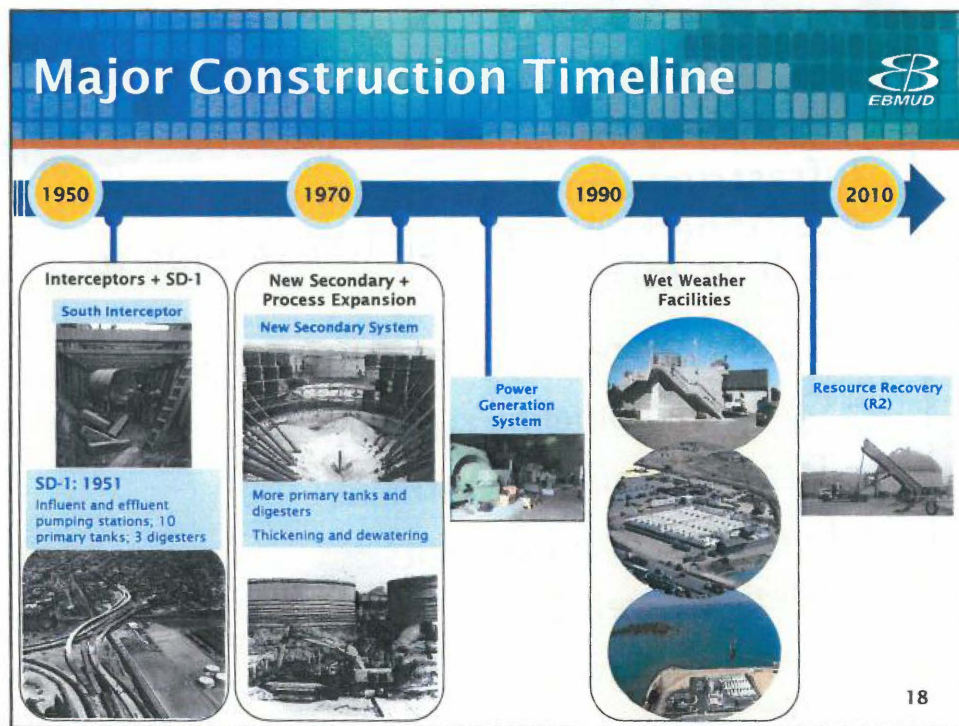
- Infrastructure investments have positioned EBMUD well to continue to fulfill its mission
- Infrastructure renewal focus on:
  - Continued pipeline ramp-up
  - Treatment plant investment
  - Raw water improvements
  - Safety and reliability
  - Meeting KPI targets

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## Wastewater



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## Emerging Regulatory Requirement

### Phase Out Use of Biosolids as Landfill ADC



- About 200 wet tons of biosolids produced daily (approximately eight trucks per day)
- No onsite storage capacity at the MWWTP
- In 2018, \$3.6 million per year was awarded for hauling and reuse

Currently about one third of biosolids go to landfill Alternative Daily Cover (ADC) during the wet weather season



This option is expected to be completely phased out by 2025 or sooner

**SB 1383 requires**

50% diversion of organics from landfill by 2020

75% by 2025



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## Emerging Regulatory Requirement

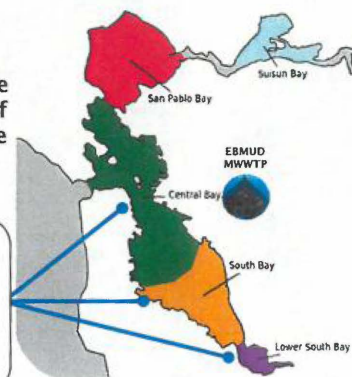
### Potential Adverse Impact to SF Bay by Nutrient Levels



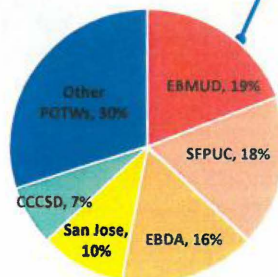
Wastewater discharge is the major source of nutrients to the SF Bay

**>90%**

Of nutrient input is from WWT effluent, remainder is by storm water



EBMUD accounts for ~19% of the total nutrient discharge from 37 WWTs combined



\* Source: San Francisco Estuary Institute (SFEI, 2014)

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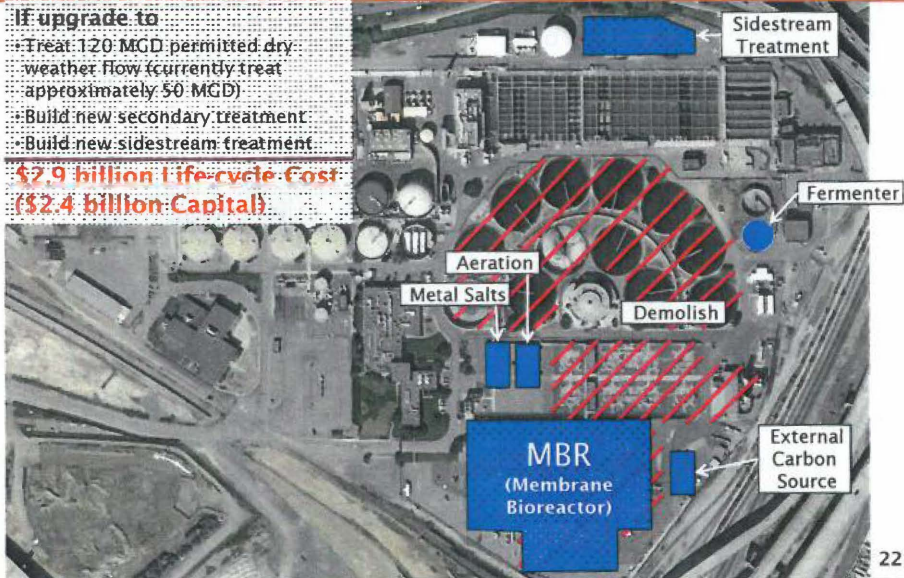
## MWWTP Nutrient Upgrades will be Substantial



### If upgrade to

- Treat 120 MGD permitted dry-weather flow (currently treat approximately 50 MGD)
- Build new secondary treatment
- Build new sidestream treatment

**\$2.9 billion Life-cycle Cost**  
**(\$2.4 billion Capital)**



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## Integrated MWWTP Master Plan to Provide a 30-year Roadmap



### Drivers

- Potential Regulatory Requirements
  - Nutrients
  - Biosolids diversion
  - Air, contaminants of emerging concern
- Infrastructure Renewal Needs
  - Aging facilities, reliability, seismic risk, sea level rise impact etc.
  - Rehabilitate, replace, or upgrade/repurpose?
- Future Flow and Load
  - Resource Recovery Program needs
  - Population/employment growth
  - Impact of I&I reduction
- Operational Improvements

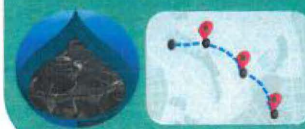


### Master Planning

Combined Efforts  
• EBMUD Staff  
• Consultant(s)

### Outcomes

- A roadmap to cost-effectively
- Provide reliable wastewater services
  - Optimize the use of infrastructures and limited land space
  - Make no-regrets infrastructure investments
  - Meet increasingly stringent regulatory requirements
  - Accommodate potential growth
  - Achieve environmental sustainability, such as:
    - Multi-benefits (recycled water)
    - Recovery versus removal
    - Greenhouse gas
    - Energy

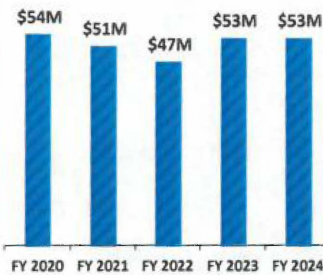


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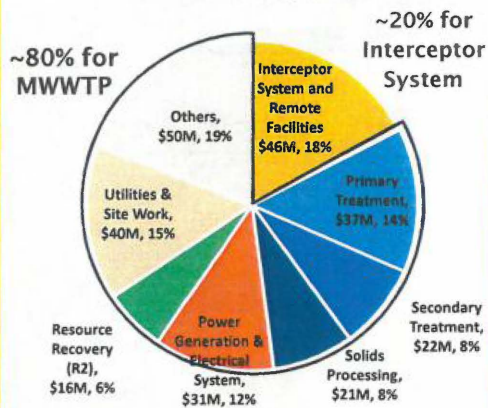
# Wastewater CIP Outlook FY20-24



## Total Five-Year CIP: \$258 million



## CIP Breakdown



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# FY20-24 CIP Highlights MWWTP Planned Investments



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## Master Plan will Inform Future Investments



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## Recommended Budget

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## Biennial Budget – FY20 & FY21



### FY20 & FY21 APPROPRIATIONS (\$ Millions)

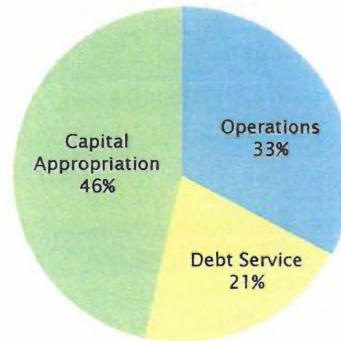
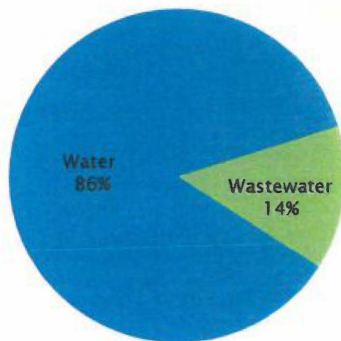
	FY20			FY21			FY20 & FY21
	Water	Wastewater	Total	Water	Wastewater	Total	Grand Total
Operations	299.3	75.1	374.4	315.4	78.6	393.9	768.3
Debt Service	208.2	30.2	238.4	217.7	29.8	247.5	486.0
Capital Appropriation	<u>622.6</u>	<u>72.3</u>	<u>694.9</u>	<u>352.3</u>	<u>41.8</u>	<u>394.1</u>	<u>1,089.0</u>
<b>Total</b>	<b>1,130.1</b>	<b>177.6</b>	<b>1,307.7</b>	<b>885.4</b>	<b>150.2</b>	<b>1,035.6</b>	<b>2,343.3</b>

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## Biennial Budget – FY20 & FY21



**\$2.34 Billion**



- 67% of budget is capital investment-related

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## FY20 & FY21 Biennial Budget Recommended Staffing



- Total authorized FTEs will increase from 2,115.0 to:
  - 2,154.75 (FY20)
  - 2,152.75 (FY21)

	FY20	FY21	Total
Additions	54.75	0	54.75
Deletions	(15.0)	(2.0)	(17.0)
Total	39.75	(2.0)	37.75

- Additional changes proposed with no net change to authorized FTEs

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## FY20 & FY21 Biennial Budget Recommended Staffing (Cont'd)



### Net FTE Major Program Staffing Changes

#### FY20

- Pipeline Rebuild 37.00
- HR Replacement Project 2.00
- HR Training/Development 1.00
- Infrastructure 0.50
- Pardee Center Services 0.25
- HR/Workforce Development (1.00)

#### FY21

- Regulatory Compliance (1.00)
- HR/Recruitment (1.00)

No net change in FTE for:

- Natural Resources Intern, FIS/MMIS Replacement Project, IT Procurement/Asset Mgmt, Saw Cutting, Concrete Services, and Legislative Affairs

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## FY20 & FY21 Internships Program Budget



- Proposed budget includes:
  - ✓ High school and other internships
  - ✓ Technical Trades Apprenticeship Program
  - ✓ Engineering Aides / Junior Engineers
  - ✓ Information Technology Intern
  - ✓ Rangers: Intern & Stipends

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## Five-Year Capital Improvement Program Cash Flows (\$ Millions)



	FY20	FY21	FY22	FY23	FY24	5-Year Total
Water	\$338	\$385	\$400	\$385	\$388	\$1,896
Wastewater	\$48	\$46	\$43	\$48	\$49	\$234

- Cash flows include Administration of Capital

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## Break

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## Recommended Rates and Charges

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## Previously Projected and Currently Proposed Rates



	FY20	FY21	FY22	FY23	FY24
Previously Projected Water	7%	7%	5%	5%	
<b>Currently Proposed Water</b>	<b>6.5%</b>	<b>6.25%</b>	<b>5%</b>	<b>5%</b>	<b>5%</b>
Previously Projected Wastewater	4%	4%	4%	4%	
<b>Currently Proposed Wastewater</b>	<b>*</b>	<b>4%</b>	<b>4%</b>	<b>4%</b>	<b>4%</b>

\*Overall increase in revenue from all wastewater rates and charges will be 4%. FY20 rates reflect COS adjustments which result in some wastewater rates decreasing and others increasing. SFR treatment bill net increase is 0.9% and WWFC net increase is 7.2%. Non-residential treatment increases vary.

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## Monthly Single Family Residential Customer Impacts – Water



	SFR Use (Ccf)	FY19 Bill <sup>+</sup>	Proposed FY20 Bill <sup>+</sup>	Change	Proposed FY21 Bill <sup>+</sup>	Change
25 <sup>th</sup> Percentile	4	\$39.67	\$42.23	6.5%	\$44.87	6.3%
50 <sup>th</sup> Percentile	6	\$47.19	\$50.23	6.4%	\$53.37	6.3%
75 <sup>th</sup> Percentile	10	\$66.46	\$70.76	6.5%	\$75.17	6.2%
95 <sup>th</sup> Percentile	24	\$152.12	\$161.98	6.5%	\$172.03	6.2%
Average SFR Use**	8	\$56.12	\$59.74	6.5%	\$63.47	6.2%

<sup>+</sup>Bill does not include elevation surcharge paid by customers at higher elevations

<sup>\*\*</sup>8 Ccf/month represents recent average single family residential use, down from 10 Ccf/month historic use

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## Monthly Single Family Residential Customer Impacts – Wastewater



Wastewater Treatment Charge <sup>a</sup>	Use (Ccf)	FY19 Bill <sup>b</sup>	Proposed FY20 Bill <sup>b</sup>	Change	Proposed FY21 Bill <sup>b</sup>	Change
Single Family Residential Avg	6	\$21.95	\$22.15	0.9%	\$23.02	3.9%
Single Family Residential Max	9	\$25.55	\$25.96	1.6%	\$26.98	3.9%

<sup>a</sup>The District also collects an annual Wet Weather Facilities Charge from all properties connected to the wastewater system

<sup>b</sup>Bill includes \$0.20 per month SF Bay Pollution Prevention Fee for residential customers

- In 2019, EBMUD performed a wastewater cost of service study of the wastewater rates that resulted in minor adjustments in the wastewater rates by customer class

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## Non-Residential Wastewater Treatment Rates



Wastewater Treatment Charge <sup>a</sup>	FY19 Current per CCF	FY20 Proposed per CCF	Change	FY21 Proposed per CCF	Change
Restaurants	\$5.47	\$5.83	6.6%	\$6.06	3.9%
Hotels	\$3.96	\$4.19	5.8%	\$4.36	4.1%
Hospitals	\$2.42	\$2.57	6.2%	\$2.68	4.3%
Retail/Office	\$2.73	\$2.83	3.7%	\$2.94	3.9%

<sup>a</sup>The District also collects an annual Wet Weather Facilities Charge from all properties connected to the wastewater system. Bill includes \$5.48 per month SF Bay Pollution Prevention Fee for non-residential customers.

- In 2019, EBMUD performed a wastewater cost of service study of the wastewater rates that resulted in minor adjustments in the wastewater rates by customer class

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## Wet Weather Facilities Charge



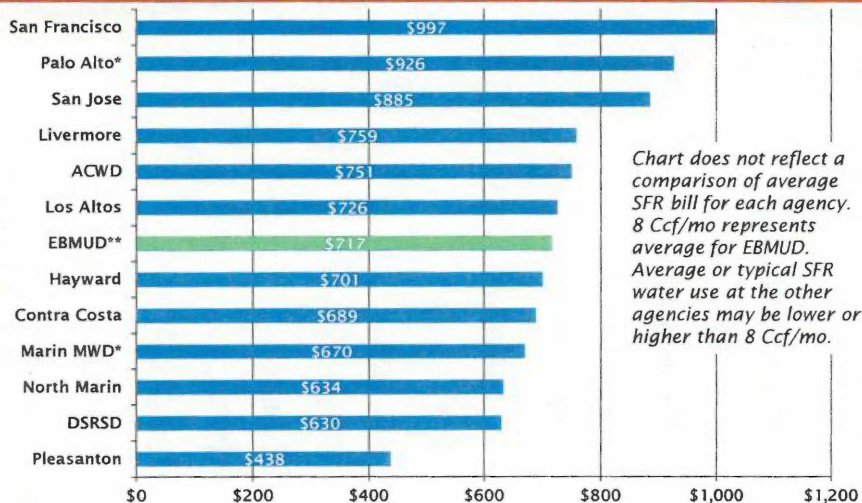
	FY19 Current	FY20 Proposed	Change	FY21 Proposed	Change
Small Lot 0 - 5,000 sq. ft.	\$103.74	\$111.24	7.2%	\$115.70	4.0%
Medium Lot 5,001 - 10,000 sq. ft.	\$162.06	\$173.78	7.2%	\$180.74	4.0%
Large Lot >10,000 sq. ft.	\$370.44	\$397.20	7.2%	\$413.10	4.0%

- In 2019, EBMUD performed a wastewater cost of service study of the wastewater rates that resulted in minor adjustments to the Wet Weather Facilities Charge
- Wet Weather Facilities Charge is collected on the property tax bill for residential and non-residential parcels connected to the wastewater system, except for public agencies and other exempt parcels, where it is collected on the water bill

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## Water Bills Calculated for 8 CCF/Mo

### Annual Charge for SFR - Effective 7/1/19



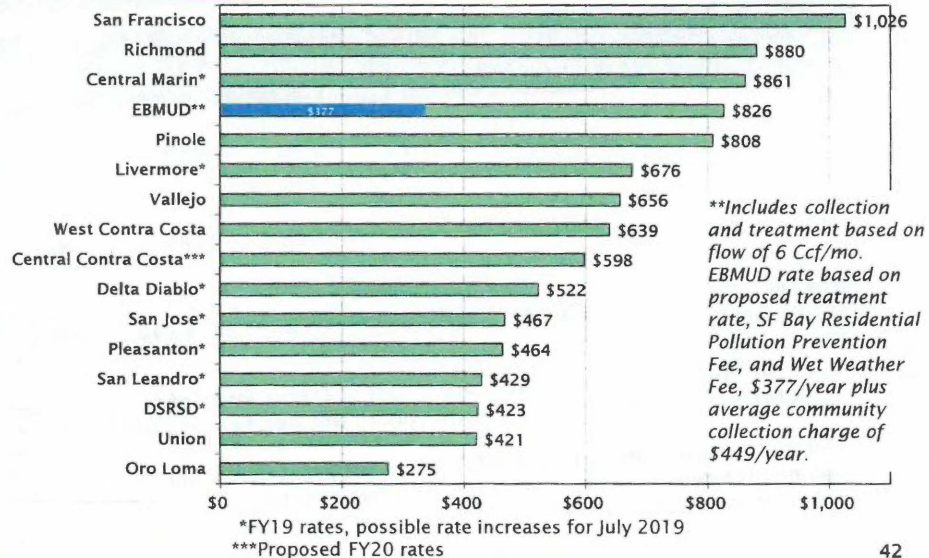
\*FY19 rates, possible rate increases for July 2019

\*\*Proposed FY20 rates

41

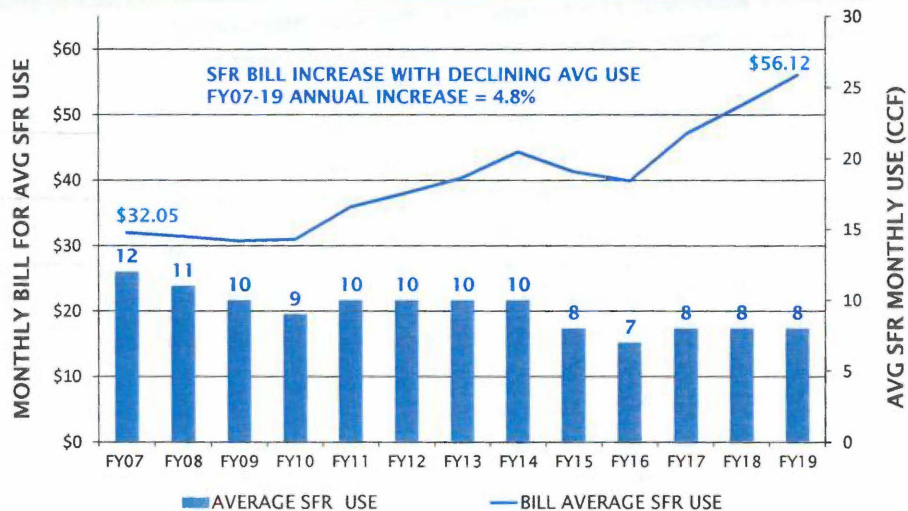


## Wastewater Bills Calculated for 6 CCF/Mo Discharge Annual Charge for SFR - Effective 7/1/19



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## Impact of Declining Average Water Use on SFR Bill



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## **Draft Prop 218 Notice**

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## **Non-Prop 218 Rates: Capacity Fees Other Fee Updates**

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## Proposed Water and Wastewater Capacity Charges Increase



### • Water System Capacity Charge (SCC)

- Adjust charges for Engineering News Record (ENR) Construction Cost Index
- Delay adjusting the Future Water Supply component pending the Water Demand Study
- SFR SCC proposed to increase about 3.0% for Regions 1, 2 and 3

### • Wastewater Capacity Fee (WCF)

- Adjust charges for 2019 Wastewater Capacity Fee Study update and ENR Construction Cost Index
- SFR WCF proposed to increase 5.4% from \$2,610 to \$2,750

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## SCC SFR Rates by Region and Sub Region



Region	SFR Consumption* (gpd)	Current SCC	Proposed FY20 SCC	Increase	Unit Costs \$/100 gpd
1	280	\$18,100	\$18,640	3.0%	\$6,657
2	360	\$31,350	\$32,350	3.2%	\$8,986
3	580	\$40,040	\$41,260	3.0%	\$7,114
3C**	775	\$91,930	\$94,670	3.0%	\$12,215
3D**	775	\$103,450	\$106,350	2.8%	\$13,723

\*Based on assumed water demand for a ¾-inch meter for a new single family residential premises

\*\*Special SCC subregion as part of an agreement with the developer

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## SCC MFR Rates by Region



Region	MFR Consumption* (gpd)	Current SCC	Proposed FY20 SCC	Increase	Unit Costs \$/100 gpd
1	163	\$10,530	\$10,850	3.0%	\$6,656
2	168	\$14,630	\$15,100	3.2%	\$8,988
3	199	\$13,740	\$14,160	3.1%	\$7,156

\*Based on assumed water demand per MFR dwelling unit

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## 2019 Wastewater Capacity Fee Study Results



### • Wastewater Capacity Fee (WCF)

- Updated the wastewater facilities costs and customer loadings from the wastewater treatment rate cost of service study
- Recalculated the WCF unit rates for flow and strength using the equity buy-in method
- Simplified the WCF assessment method for non-residential customers

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## Equity Buy-In Unit Rates



	Total System Value [A]	Net Plant Influent [B]	Unit Cost [C] = [A ÷ B]
Flow	\$290,522,000	20,983,276 (Ccf/year)	\$13.85 per Ccf/year
COD	\$154,297,000	106,264,585 (lbs/year)	\$1.45 per lb/year
TSS	\$278,037,000	41,790,303 (lbs/year)	\$6.66 per lb/year

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## WCF FY19 – Non-Residential Capacity Fee Update



- Recommend creating 3 categories of non-residential strength categories for WCF
  - Replaces current process based on individual business category classifications
  - Based on meter size (up to 1½")
  - Simplifies WCF calculation, increases transparency
  - In most instances results in lower or comparable fee

Strength Category	5/8" meter	¾" & 1" meter	1 ½" meter
Low	\$4,090	\$8,280	\$16,210
Medium	\$10,760	\$21,750	\$42,610
High	\$20,960	\$42,390	\$83,020

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## Other Proposed Updates to Rates, Fees & Charges (Non-Prop 218)



- **To be included in May 14<sup>th</sup> General Manager's Rates and Charges Report to the Board**
- **Ensuring reasonable fees based on cost recovery**
  - Water Account Establishment
  - Special Services Charges
  - Installation Charges: Water Service, Private Fire Service, Public Fire Hydrant, Water Main Extension (continuation of three-year phase-in from FY19)
  - Real Property Use Application Fees
  - Recreation Use Fees
  - Wastewater Fees: Industrial Permit, Other, Testing, Resources Recovery, Interceptor Connection Review

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**Follow Up from Workshop #1**

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## Fixed vs. Variable Rate Sensitivity Analysis



	% Fixed/Variable	First Year Revenue Loss After Drought \$ M	Post Drought Rate Impact (one time)
Current	29%/71%	\$38.5	
+5% Fixed	34%/66%	\$35.7	0.4% Lower
+10% Fixed	39%/61%	\$33.0	0.7% Lower
-5% Fixed	24%/76%	\$41.2	0.4% Higher

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## Tax Bill Financing – General Obligation Bonds



Option	Authority	Requirements	Issues
General Obligation (GO) Bonds for new capital investments	MUD Act	2/3 voter approval	Very uncommon for water utilities post passage of Prop 13

- The District has used GO bonds to fund WW infrastructure in the past.
- The tax will be collected for the life of the bonds, generally 30 years.
- Assessed values (AV) can vary dramatically based on date of purchase:
  - A \$500M GO bond would result in a tax of ~\$25/\$100,000 AV.
  - A home with an AV of \$300,000 would contribute \$75 per year.
  - A similar home purchased recently with an AV of \$900,000 would contribute \$225 per year for the same improvements.

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## Tax Bill Financing – Assessments



Option	Authority	Requirements	Issues
Assessments for water services that benefit properties	Prop 218	50% mail in ballot approval	Today mostly used for new developments

- Approval requires that 50%+ of the returned ballots vote yes for the assessment (property owners only).
- Charge must be proportional to special benefit (as opposed to general benefit) received by parcel; burden of proof is onerous and often challenged.

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## Tax Bill Financing – Water Charges on Property Tax Bill



Option	Authority	Requirements	Issues
Water Charges on Tax Bill	Health and Safety Code	2/3 Board approval Health & Safety Code MUD Act and Prop 218	Common for wastewater utilities - rarely used for water utilities

- Lends itself better to fixed charges rather than variable; H&SC imposes various requirements and dictates allowable costs.
- The District would need to address issue of property owner vs. customer of record; property owner would need to be named in addition to tenant account holders; new Cost of Service Study needed to justify costs collected against property owners.

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## Future Opportunity to Examine Water Rate Structure



Next opportunity to review	Potential Time Frame	Earliest Effective Date
<b>Fixed Charges:</b> 1) Reallocation of costs assigned to fixed charge 2) Placement of Water Charges on Property Tax Bill	FY20/21	FY22
<b>Variable Charges:</b> 1) Review Variable Charges 2) Consider Water Budget Based Rates	FY20/25	FY22-26
A COS update is not required under Board policy until 2025.		

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## Workshop Conclusions



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## Biennial Budget – FY20 & FY21



### Appropriation

- Total two-year budget of \$2.35 billion
- 67% capital investment-related

### Budget Priorities

- Continue investments in and maintenance of aging infrastructure
- Plan for long-term financial stability

### Proposed Rates

- Water System: 6.5% (FY20); 6.25% (FY21)
- Wastewater System: \*(FY20); 4.0% (FY21)

\*Overall increase in revenue from all wastewater rates and charges will be 4%.  
FY20 rates reflect COS adjustments which result in some wastewater rates decreasing and others increasing. SFR treatment bill net increase is 0.9% and WWFC net increase is 7.2%.  
Non-residential treatment increases vary.

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## Biennial Budget – FY20 & FY21



Board Workshop 1 <i>Preliminary budget and rates</i>	January 22, 2019
Board Workshop 2 <i>Recommended budget and rates</i>	Today
Prop 218 Notice mailing	April 26, 2019
File GM Rate Report	May 14, 2019
Public Hearing	June 11, 2019
FY20 Rates Effective	July 1, 2019

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## Board Discussion



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