RESOLUTION NO. 35454-25

ADOPTING REVISED WATER AND WASTEWATER SYSTEMS SCHEDULES OF RATES, CHARGES, AND OTHER FEES NOT SUBJECT TO PROPOSITION 218 FOR FISCAL YEAR 2026; ADOPTING REVISED REGULATIONS GOVERNING WATER SERVICE; CONFIRMING THE EXEMPTION DETERMINATION UNDER THE CALIFORNIA ENVIRONMENTAL QUALITY ACT; AND DIRECTING STAFF TO FILE A NOTICE OF EXEMPTION

Introduced by Director Oddie ; Seconded by Director Smith

WHEREAS, the Board of Directors of the East Bay Municipal Utility District (District) has reviewed and will consider adoption of the Fiscal Year 2026 (FY 2026) and Fiscal Year 2027 (FY 2027) Biennial Budget (Biennial Budget), which is reflected in the Proposed Biennial Budget Fiscal Years 2026 and 2027, Volumes 1 and 2, for expenditures necessary and advisable for the proper conduct of the activities of the District; and

WHEREAS, in June 2021, Stantec Consulting Services, Inc., completed a capacity fee study for the Water System (Water System Capacity Charge [SCC] Study]; the Water SCC Study is attached as Exhibit D and is incorporated herein by reference; and

WHEREAS, in May 2019, Raftelis Financial Consultants, Inc., completed a cost-of-service (COS) and capacity fee study for the District's Wastewater System (WCF Study); the WCF Study is attached as Exhibit E and is incorporated herein by reference; and

WHEREAS, in accordance with Section 14401 of the California Public Utilities Code, on May 13, 2025 the General Manager filed with the Board of Directors the Report and Recommendation of the General Manager for Revisions to the Water and Wastewater Schedules of Rates and Charges, Capacity Charges, and Other Fees Not Subject to Proposition 218 for Fiscal Year 2026 and to Select Regulations (GM Report and Recommendation), in which the General Manager recommends the District's Board of Directors adopt the proposed rates, charges, and other fees; the GM Report and Recommendation is incorporated herein by reference; and

WHEREAS, the rates, charges, and other fees, including the proposed revisions thereto, as described in this Resolution are not subject to article XIII D, section 6 of the California Constitution (Proposition 218); and

WHEREAS, public workshops on the District's budget and rates were conducted on January 28, 2025 and March 25, 2025 and a public workshop on the District's infrastructure was conducted on November 26, 2024; and

WHEREAS, a public hearing, noticed in the manner and for the time required by law, was conducted by the Board of Directors on June 10, 2025, at which times all interested persons were afforded an opportunity to be heard on matters pertaining to the proposed water and wastewater rates, charges, and other fees; and

WHEREAS, all comments, objections, protests, and challenges pertaining to the GM Report and Recommendation and the recommendations therein have been given full opportunity to be heard by the Board of Directors; and

WHEREAS, the Board of Directors has fully considered the GM Report and Recommendation, and any and all of such aforesaid comments, objections, protests, and challenges; and

WHEREAS, the proposed rates, charges, and other fees as described above and as further set forth in this Resolution are subject to, and have been adopted in compliance with, Chapter 11.5 of the Municipal Utility District Act (Public Utilities Code section 14401, et seq.); and

WHEREAS, the District has issued and has maintained Regulations Governing Water Service (Regulations), which from time to time, are revised; and

WHEREAS, the Board of Directors now desires to adopt and to impose the proposed water and wastewater rates, charges, and other fees; and

WHEREAS, the Board of Directors now desires to make revisions to select Regulations; and

WHEREAS, the District, as the lead agency under the California Environmental Quality Act (CEQA), in consultation with the District's legal counsel, has determined that adoption of the rates, charges, and fees set forth in this Resolution is exempt from CEQA review under Public Resources Code section 21080(b) and CEQA Guidelines section 15273 because the rates, charges, and fees are necessary and reasonable to fund the administration, operation, maintenance, and improvements of the Water and Wastewater Systems and will not result in the expansion of the Water and Wastewater Systems. This exemption determination is supported by the GM Report and Recommendation and the foregoing Recitals. Further, the District has determined that the adoption of the rates, charges, and fees set forth in this Resolution is also exempt from the requirements of CEQA as an action with no possibility of causing a significant effect on the environment;

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of the East Bay Municipal Utility District hereby finds and determines the following:

1. The foregoing Recitals are true and correct, and by this reference are incorporated herein and made a part hereof.

2. The rates, charges and other fees not subject to Proposition 218 adopted herein are imposed, where applicable, to recover the reasonable costs of providing the relevant services. The charges adopted herein are not imposed upon real property or upon a person as an incident of property ownership and were not calculated or developed on the basis of any parcel map, including an assessor's parcel map.

3. The purpose of the SCC and the Standard Participation Charge (SPC) is to finance facilities necessary to provide service to new or expanded development that will be served by the District. Each is levied only as a condition of extending or initiating service upon the request of a customer. The SCC and SPC are charges for public facilities in

existence at the time the charge is imposed or for new public facilities to be acquired or constructed in the future that are of proportional benefit to the person or property being charged, including supply or capacity contracts for rights or entitlements, real property interests, and entitlements and other rights of the District involving capital expense relating to its use of existing or new public facilities. The SCC reflects the findings and recommendations of the SCC Study.

4. The revisions to the SCC, as set forth in Schedule J – System Capacity Charge (SCC), which is attached as part of Exhibit A hereto, are necessary and appropriate to reflect updates for construction cost escalation, depreciation, additional facilities and future supply projects, and outstanding debt balance.

5. The revisions to the SPC, as set forth in Schedule H – Standard Participation Charge (SPC), which is attached as part of Exhibit A hereto, are necessary and appropriate to reflect the allowable costs for facilities necessary to serve applicants who had separate facility agreements with the District prior to July 1, 1983.

6. The revisions to the Water Demand Mitigation Fees, set forth in Schedule N – Water Demand Mitigation Fees, which is attached as part of Exhibit A hereto, are necessary and appropriate to reflect the latest future water supply costs and to reflect the latest U.S. City Average of the Consumer Price Index.

7. The facts and evidence presented to the Board of Directors establish that there is a reasonable relationship between the need for the identified facilities and the impacts of the types of development for which the SPC, SCC, and Water Demand Mitigation Fees are charged, and there is a reasonable relationship between the use of those fees to finance facilities necessary to provide a supply of water to new development and the type of development for which the fees are charged. The District's methodology appropriately allocates to the aforesaid fees the costs related to augmenting the District's water supply facilities to satisfy increased demand associated with development within the District's existing service area. None exceeds the estimated reasonable cost of providing the service for which it is imposed.

8. The purpose of the WCF is to recover the costs of providing wastewater treatment capacity for new or expanded system use. It is levied only as a condition of extending or initiating service upon the request of a customer. The WCF is a charge for public facilities in existence at the time the charge is imposed that is of proportional benefit to the person or property being charged, including supply or capacity contracts for rights or entitlements, real property interests, and entitlements and other rights of the District involving capital expense relating to its use of existing or new public facilities. The revisions to the WCF, as set forth in Schedule G – Wastewater Capacity Fees, which is attached as part of Exhibit B hereto, are necessary and appropriate to reflect updates for construction cost escalation, depreciation, additional facilities, and outstanding debt balance. The proposed WCF reflects the findings and recommendations of the WCF Study.

9. The revisions to the WCF, set forth in Schedule G – Wastewater Capacity Fees, which is attached as part of Exhibit B hereto, include updates for the construction of additional facilities and construction cost escalations.

10. The facts and evidence presented to the Board of Directors establish that there is a reasonable relationship between the need for the identified facilities and the impacts of the types of development for which the WCF is charged, and there is a reasonable relationship between the use of those fees to finance facilities to new development and the type of development for which the fees are charged.

11. The revisions to Schedule B – Account Establishment Charge, Schedule C – Charges for Special Services, Schedule D – Water Service Installation Charges, Schedule E – Private Fire Service Installation Charges, Schedule F – Public Fire Hydrant Installation Charges, and Schedule G – Water Main Extension Charges, which are attached as part of Exhibit A, and to Schedule C – Industrial Permit Fees, Schedule D – Other Fees, Schedule E – Testing Fees, Schedule F – Resource Recovery Fees and Prices, and Schedule H – Wastewater Interceptor Connection Review, Coordination and Inspection Fees, which are attached as part of Exhibit B, are implemented to revise the charges in these schedules to reflect reasonable costs.

12. The revisions to the Regulations and are as follows: Section 1– Explanation of Terms Used in These Regulations, to update regulatory references for Accessory Dwelling Unit and Junior Accessory Dwelling Unit; Section 4 – Main Extensions, to add a consideration for traffic conditions and heavily traveled roads for separate parallel water mains; Section 17 – Change in Use and/or Size of Service, to update the California Government Code reference; Section 26 – Protection of Public Water Supply, to update regulatory references, expand on backflow prevention requirements, clarify customer's maintenance responsibilities, incorporate an annual reporting requirement, clarify responsibility for device upgrades, and clarify conditions for service disconnection; Section 30 – Recycled Water Service, to rename the regulation to Recycled Water Services and to include stricter compliance requirements, detail cost responsibilities, outline a permit process, add interim potable water provisions, and enhance enforcement measures; and Section 31 – Water Efficiency Requirements, to update the measurement for indoor water use for toilets.

13. The Public Records Act Fee Schedule, Real Property Use Application Fees, and Recreation Use Fees are imposed for specific products, services, benefits, and privileges provided, or for entrance to, use of, rental of, or lease of property and those rates, charges, and fees do not exceed the reasonable costs to the District of providing those products, benefits, privileges, and services to the payors, or in the case of fees for entrance to, use of, rental of, or lease of property, the fees do not exceed the reasonable value of the property interest provided. These rates, charges, and fees were determined by the District based upon evidence regarding such costs, and the revisions thereto set forth herein are necessary to reflect reasonable costs, as determined by the District based upon evidence regarding such costs.

BE IT FURTHER RESOLVED:

14. All objections and protests to the GM Report and Recommendation are hereby overruled and denied and said GM Report and Recommendation is hereby accepted and approved.

15. Schedule B – Account Establishment Charge, Schedule C – Charges for Special Services, Schedule D – Water Service Installation Charges, Schedule E – Private Fire Service Installation Charges, Schedule F – Public Fire Hydrant Installation Charges, Schedule G – Water Main Extension Charges, Schedule H – Standard Participation Charge (SPC), Schedule J – System Capacity Charge (SCC), and Schedule N – Water Demand Mitigation Fees beginning FY 2026, and the revised Section 1 – Explanation of Terms Used in These Regulations, Section 4 – Main Extensions, Section 17 – Change in Use and/or Size of Service, Section 26 – Protection of Public Water Supply, Section 30 – Recycled Water Service, and Section 31 – Water Efficiency Requirements of the Regulations, all contained in Appendix A of the GM Report and Recommendation, and all attached hereto as part of Exhibit A, are hereby adopted and the charges and provisions therein contained are hereby fixed and established to be effective July 1, 2025 for services rendered on or after July 1, 2025.

16. Schedule C – Industrial Permit Fees, Schedule D – Other Fees, Schedule E – Testing Fees, Schedule F – Resource Recovery Fees and Prices, Schedule G – Wastewater Capacity Fees, and Schedule H – Wastewater Interceptor Connection Review, Coordination and Inspection Fees beginning FY 2026, all contained in Appendix A of the GM Report and Recommendation, and all attached hereto as part of Exhibit B, are hereby adopted and the charges and provisions therein contained are hereby fixed and established to be effective July 1, 2025 for services rendered on or after July 1, 2025.

17. The Public Records Act Fee Schedule and the Real Property Use Application Fees contained in Appendix A of the GM Report and Recommendation, and attached hereto as Exhibit C, are hereby fixed and established to be effective July 1, 2025 for services rendered on or after that date.

18. The Recreation Use Fees for Calendar Year 2026, contained in Appendix A of the GM Report and Recommendation, and attached hereto as part of Exhibit C, are hereby fixed and established to be effective January 1, 2026 unless otherwise specified for services rendered on or after that date.

19. As set forth more fully above and as evidenced by the GM Report and Recommendation, the aforesaid actions constitute modification and approval of rates and other charges for the purpose of meeting operating expenses, including employee wage rates and fringe benefits; purchasing or leasing supplies, equipment, or material; meeting financial reserve needs and requirements; or obtaining funds for capital projects necessary to maintain service in the existing service area; and the Board of Directors therefore confirms the District's determination that its aforesaid actions are exempt from the requirements of CEQA. The Board of Directors further confirms the District's determination that these actions are exempt from the requirements of CEQA because there is no possibility that adoption of the rates, charges, and other fees set forth herein will have a significant effect

on the environment. Therefore, the Board of Directors hereby directs the Secretary of the District to file a Notice of Exemption in accordance with applicable statutes and regulations with the County Clerks of Alameda, Amador, Calaveras, Contra Costa, and San Joaquin Counties.

BE IT FURTHER RESOLVED:

20. If any section, subsection, clause or phrase in this Resolution or the application thereof to any person or circumstances is for any reason held invalid, the validity of the remainder of this Resolution or the application of such provisions to other persons or circumstances shall not be affected thereby and shall remain in full force and effect until modified or superseded by action of the Board of Directors. The Board of Directors hereby declares that it would have passed this Resolution and each section, subsection, sentence, clause, or phrase thereof, irrespective of the fact that one or more sections, subsections, sentences, clauses or phrases or the application thereof to any person or circumstance be held invalid.

BE IT FURTHER RESOLVED:

21. The appropriate officers of the District are hereby authorized and directed to take such actions as shall be necessary to impose, enforce and collect said rates, charges, other fees, and regulations.

22. This Resolution shall take effect immediately upon its adoption, provided that the revised rates, charges, and other fees shall take effect at the times stated herein.

ADOPTED this 10th day of June, 2025 by the following vote:

AYES: Directors Chan, Gómez, Katz, Lewis, Oddie, Smith, and President Young.

NOES: None.

ABSENT: None.

ABSTAIN: None.

Marjorie Young
President

ATTEST:

Ricila S. Cole
Secretary

APPROVED AS TO FORM AND PROCEDURE:

General Counsel

EXHIBIT A

Schedule B

Account Establishment Charge

FY 2026

SCHEDULE B – ACCOUNT ESTABLISHMENT CHARGE

EFFECTIVE 07/01/2025

The charge for establishing a new account or for transferring an account for a customer moving from one address to another within the District's service area is $76 with the following exceptions:

- Customers in the Customer Assistance Program shall be charged $38.
- Landlords requiring temporary water service for a period not to exceed 60 days shall be charged $38, with the balance of the Account Establishment Charge billed for water service that exceeds 60 days.
- There will be no transfer fee to change the name of an account when the responsible party is a landlord who has signed an intervening water service agreement.
- There will be no transfer fee to change the name of an account when the same person or entity is to remain responsible.
- Customers may use the EBMUD website and use the online process to electronically set up a new account or transfer an existing account from one address to another when they move. The charge for electronically establishing a new account or electronically transferring an existing account for a single-family residence customer is $60.

Schedule C

Charges for Special Services

FY 2026

A. METER TESTING

Charges for meter testing will be in accordance with the following schedule:

SIZE OF METER	TESTING CHARGES
5/8", 3/4", and 1"	$76
1-1/2" and 2"	$76 On Site $171 Pull/Test
3" and larger	$342 On Site Actual Cost Pull and Test

B. SERVICE INTERRUPTION

The charge for shutting off water service due to non-payment of a water bill $50

The charge for restoring service after payment has been received during regular office hours $50

The charge for restoring service between 5 p.m. and 8 a.m. or on Saturday, Sunday, or on a holiday $89

An additional charge to lock or plug the meter due to non-payment or unauthorized water use

S-Lock	$81
Plug	$538

A service interruption charge of $50 may be charged in the event of any additional field stops to shut off service beyond the initial service interruption, including EBMUD locking the meter if the customer self-restores water service prior to making payment. (See Section M.)

C. RETURNED PAYMENT CHARGE

A charge of $27 shall be paid for each check or electronic transaction received as payment to the District that is returned unpaid from a financial institution.

D. PROCESSING FEES FOR DELINQUENT CHARGE COLLECTION THROUGH LIENS AND PROPERTY TAX BILLS ON MULTI-FAMILY AND SINGLE-FAMILY RESIDENTIAL ACCOUNTS

For multi-family residential accounts, the District may place liens on parcels with unpaid charges and collect unpaid amounts on parcels' property tax bills. Multi-family residential accounts are residential accounts where a water meter serves two or more dwellings. The District may place liens on parcels with unpaid charges and collect unpaid amounts on parcels' property tax bills for single-family residential accounts meeting the criteria defined in Section 15A of the District's Regulations Governing Water Service.

1.	Lien Filing Fee	$169 per lien (in Alameda County) $145 per lien (in Contra Costa County)
2.	Lien Removal Fee	$123 (in Alameda County) and $119 (in Contra Costa County) for first lien removed $56 (in Alameda County) and $52 (in Contra Costa County) for each additional lien removed at the same time
3.	Property Tax Transfer Fee Unpaid Charges with Liens Recorded	$24 + 1.7% of the lien amount (in Alameda County) $24 + $3 per parcel (in Contra Costa County)

E. PROHIBITED WATER USE CHARGE

A charge of $50 shall be paid to cover the monitoring costs incurred by the District if, after written notification, excessive or prohibited water use is not curtailed.

F. FLOW-RESTRICTOR INSTALLATION

The charge for District installation of a flow-restricting device on any service, for reasons the District deems necessary, including continued excessive water use, after written notification, will be in accordance with the following schedule:

1. On services two-inches and smaller –

5/8” and 3/4”	$161
1”	$161
1-1/2”	$346
2”	$346

2. All others –

   The charges for installing flow-restricting devices on water services, other than those in the above schedule, shall be the reasonable estimated cost for the work including installing the device, as determined by the District, including engineering, equipment, material, consumables, labor, and related expenses.

G. NOTICE OF PROHIBITED WATER USE AND FLOW-RESTRICTOR CHARGES

For the purposes of Sections E and F above, written notification shall:

1. Specify the date by which excessive or prohibited water use must be curtailed to avoid further enforcement action; and

2. Be sent by certified mail (return receipt requested) or by other written means which would be sufficient for obtaining personal service in a legal proceeding.

H. RESCINDED 12/10/96

I. BACKFLOW DEVICE ANNUAL CERTIFICATION CHARGE

Where an approved backflow prevention device of the proper type is required at the customer's expense. See Section 26 of the District's Regulations Governing Water Service.

1. The charge for administering the Backflow Program Certification for all specified accounts (annually) $73

2. The charge for District staff to conduct a hazard assessment for a backflow/cross connection inspection $173/hr.

3. The charge for backflow testers to be placed on the District's list of certified testers $211

J. BACKFLOW DEVICE VIOLATION

For those customers where the service has been terminated for failure to meet the District's Backflow Program requirements, a charge will be made pursuant to the termination and restoration of service $737

K. LATE PAYMENT PENALTY AND INTEREST

For those customers with outstanding overdue balances exceeding $10 at billing, a charge equivalent to 1.5 percent of the overdue balance (minimum charge $1) will be made to recover foregone interest on District money and the District's costs to process overdue accounts. Customers in the Customer Assistance Program shall be exempt from the late payment penalty and interest.

L. PROCESSING FEE FOR INTERVENING WATER SERVICE AGREEMENT

The charge for the District to process an intervening water service agreement for a participating landlord in the District's automated landlord sign-on service $87

Requests to modify intervening water service agreement property account information must be submitted in writing and can be dropped off, mailed, or faxed to a District business office.

The charge for each written request to modify the original intervening water service agreement by adding to or deleting property account information from the original agreement $87

M. SERVICE TRIP CHARGE

The charge for District staff to perform special services for customers $50

The charge may be applied for, but is not limited to, the following:

1. Additional field stops beyond the initial service interruption to shut off service due to non-payment, including a field stop to lock the meter if the customer self-restores water service prior to making payment;
2. Follow-up site visits to customers who have not complied after the District's notification to correct an obstructed meter condition or to remove unauthorized devices or equipment attached to District property in the meter box; and
3. Field inspections conducted at the customer's request.

N. PUBLIC HYDRANT METER ACCOUNT ESTABLISHMENT CHARGES

Customers may request a hydrant meter that can be hooked up to a public fire hydrant to measure water use at a property site. Customers are required to: 1) provide hydrant meter readings every two months, within two weeks of the meter read due date; 2) return hydrant meter equipment within one month following a meter use period; and 3) renew the hydrant meter permit and exchange the hydrant meter equipment within 11 months from the date of issuance, if continued use is desired.

The charge to establish water service for a hydrant meter $155

The charge to renew a hydrant meter account at the end of a 12-month period $155

Hydrant meter security deposit (1" meter with backflow device) $859

Hydrant meter security deposit (3" meter without backflow device) $1,490

Hydrant meter security deposit (3" meter with backflow device) $2,614

The District will determine the type of hydrant meter needed based on information submitted by the applicant. The District's decision shall be final.

If a field stop is required to establish a new account, a $310 site visit charge shall be paid in addition to the $145 account establishment charge (See Section O.)

O. PUBLIC HYDRANT METER ACCOUNT SITE VISIT CHARGE

The charge for a Field Services Representative to conduct a hydrant meter site visit to perform special services for customers $310

The charge shall be applied for, but is not limited to, the following:

1. Reading hydrant meters for which the two-month reading was not submitted by the customer;
2. Retrieving hydrant meter equipment from a customer site;
3. Delivering hydrant meter equipment to a customer; and
4. Establishing or renewing a hydrant meter account in the field.

Schedule D

Water Service Installation Charges

FY 2026

Requests for the installation of a water service or changes to a water service must comply with all applicable District Regulations Governing Water Service.

A. INSTALLING A SERVICE

The charge for installing water service (meter, lateral, and appurtenances), including a private fire service requiring a meter that is smaller than 4 inches, will be in accordance with the following schedule. The charge for installing a private fire service meter that is 4 inches or larger is set forth in Schedule E – Private Fire Service Installation Charges.

1. METERS SMALLER THAN FOUR INCHES

   a. Regular Services (1 meter per lateral)

LATERAL AND METER SIZE	INSTALLED IN PAVED CONDITIONS[1]	INSTALLED IN UNPAVED CONDITIONS[2]
1” and smaller Lateral with 1” and under meter	$11,878	$6,633
1-1/2” Lateral with 1-1/2” and under meter	19,162	11,786
2” Lateral with 2” and under meter	19,162	11,786
3”[3] Lateral with 3” and under meter	41,255	28,427
4”[3] Lateral with 4” and under meter	41,255	28,427
6” Lateral with 6” and under meter	58,664	40,251
8” Lateral with 8” and under meter	58,664	40,251

[1] Paved conditions are areas already paved and with existing utilities, curb, gutter, and asphalt in place. Paved conditions also include areas where more utilities than sanitary sewer or storm drain exist.
[2] Unpaved conditions are limited to conditions where paving has not previously existed and the only existing utilities are sanitary sewer and storm drain. The conditions of the site must not include asphalt, curb, gutter, paving, or first or final lift.
[3] Requires steel pipes.

b. Branch Services (2 or more meters per lateral)

METER SIZE	# OF METERS	INSTALLED IN PAVED CONDITIONS[4]	INSTALLED IN UNPAVED CONDITIONS[5]
5/8" Meters	2	$12,691	$7,446
	3	20,226	12,841
	4	21,039	13,654
	5	21,852	14,467
	6	22,665	15,279
	7	23,478	16,092
	8	24,290	16,905
1" Meters	2	19,413	12,028
	3	20,226	12,841
	4	21,039	13,654

c. Adjustment for Applicant Assisted Service Installations

Applicants requesting installation of at least 15 service laterals may choose to provide their own trenching and backfilling and be eligible to receive a refund of up to $666 per service lateral installed provided that the applicant:

(i) pays the appropriate charges for each service as specified in sections (a) or (b) above.

(ii) clears the construction site of obstructing materials and equipment.

(iii) excavates a minimum of 15 service laterals ahead of District crews.

(iv) hauls sand and select backfill to the construction site for use by District crews in supporting the service lateral and for applicant backfilling of trenches.

(v) backfills and compacts the trenches after District crews have installed and properly secured the service lateral.

(vi) reimburses the District for (1) unproductive crew standby due to applicant's failure to prepare the site or excavate trenches in advance; (2) District costs to repair damage done by applicant's trenching operation; (3) other reasonable District costs.

[4] Paved conditions are areas already paved and with existing utilities, curb, gutter, and asphalt in place. Paved conditions also include areas where more utilities than sanitary sewer or storm drain exist.
[5] Unpaved conditions are limited to conditions where paving has not previously existed, and the only existing utilities are sanitary sewer and storm drain. The conditions of the site must not include asphalt, curb, gutter, paving, or first or final lift.

2. ALL OTHERS

The charge or credits for installing all water services other than those specified in Section (A)(1) of this schedule shall be the reasonable estimated cost for the work including installing the service, as determined by the District, including engineering, equipment, material, consumables, labor, and related expenses.

B. COST OF INCREASING METER SIZE (Up to available capacity on existing lateral)

1" and smaller Tap and Lateral	$1,512[6]
1-1/2" Tap and Lateral	$1,603[6]
2" Tap and Lateral	$1,603[6]
4" Tap and Lateral	$1,603[6]
4" Tap and Lateral	$9,565[6]

C. COST OF REDUCING METER SIZE

1", 1-1/2" and 2" Laterals	$1,486[6]
3" and 4" Laterals	$4,059[6]

D. RELOCATING AN EXISTING SERVICE

1. To relocate an existing service perpendicular to the curb line or a distance not exceeding five feet parallel to the curb line, a charge will be $3,102.

2. To transfer service or to relocate an existing service a distance exceeding five feet parallel to the curb line, a charge will be made in accordance with Section A – Installing a Service plus the cost of eliminating old service connection.

E. RESETTING OR REPLACING A METER

There will be a charge equivalent to 5 percent of the water service installation charge for resetting a meter on an existing service connection.

There will be a charge equivalent to 5 percent of the water service installation charge for replacing a meter when applicants lose or damage meters when constructing new developments.

[6] Additional charge of $600 if concrete replacement required.

F. CONVERSION OF INDIVIDUAL SERVICE TO BRANCH SERVICE AND CONVERSION OF BRANCH SERVICE TO INDIVIDUAL SERVICE

(Multi-metering, when feasible)

Branch Conversion	$2,812[6] for two meter conversion, $813[6] for each additional meter

G. SERVICE ELIMINATIONS

3/4” to 2”	$2,888[6]
3” to 12”	$4,885[6]

H. INSTALLATION OR OTHER WORK UNDER UNUSUAL CONDITIONS

The above charges apply to installation charges for water services four inches and smaller except where there are unusual or special conditions, for example but not limited to traffic control, permit conditions, underground street utility congestions, known potential for archeological or paleontological resources, contaminated soils, and streets with multi-layered surface types, which, in the opinion of the District, would result in the need for additional services and materials, including but not limited to added testing and inspection, changes due to project revisions, property rights evaluation, clean soil utility corridor establishment, and any construction by District forces to complete the installation. In such cases, the charge will be based on the District’s reasonable estimated cost for the work including all engineering, material, equipment, labor, consumables, and related expenses incidental to the installation.

Schedule E

Private Fire Service Installation Charges

FY 2026

Requests for the installation of a private fire service must comply with all applicable District Regulations Governing Water Service.

A. INSTALLING A PRIVATE FIRE SERVICE

The charge for installing a private fire service (fire service meter, lateral, and other appurtenances necessary to support a property's fire sprinkler system) will be in accordance with the following schedule:

METER SIZE	INSTALLED IN PAVED CONDITIONS[1]	INSTALLED IN UNPAVED CONDITIONS[2]
4"	$34,531	$21,695
6"	37,201	24,364
8"	51,732	33,320

The typical private fire service installation will require a meter that is 4" or larger. Cost to install a meter smaller than 4" is shown in Schedule D – Water Service Installation Charges, Section A.1 – Installing a Service, Meters Smaller Than Four Inches.

The cost to install a meter 10" or larger shall be the reasonable estimated cost, as determined by the District, for the work to install the service, including engineering, equipment, material, consumables, labor, and related expenses.

B. INSTALLATION UNDER UNUSUAL CONDITIONS

The above charges apply to all installation charges for private fire services except when there are unusual or special conditions, for example but not limited to traffic control, permit conditions, underground street utility congestion, known potential for archaeological or paleontological resources, contaminated soils, and streets with multi-layered surface types, which, in the opinion of the District, would result in the need for additional services and materials, including but not limited to added testing and inspection, changes due to project revisions, property rights evaluation, site conditions or contaminated soil, clean soil utility corridor establishment, and any construction by District forces to complete the installation. In such cases, the charge will be based on the District's reasonable estimated cost for the work including all engineering, material, equipment, consumables, labor, and related expenses incidental to the installation.

[1] Paved conditions are areas already paved and with existing utilities, curb, gutter, and asphalt in place. Paved conditions also include areas where more utilities than sanitary sewer or storm drain exist.

[2] Unpaved conditions are limited to conditions where paving has not previously existed and the only existing utilities are sanitary sewer and storm drain. The conditions of the site must not include asphalt, curb, gutter, paving, or first or final lift.

Schedule F

Public Fire Hydrant Installation Charges

FY 2026

SCHEDULE F – PUBLIC FIRE HYDRANT INSTALLATION CHARGES

EFFECTIVE 07/01/2025

Requests for the installation, removal, or relocation of a fire hydrant must comply with all applicable District Regulations Governing Water Service.

The following charges will be made for the installation, removal, or relocation of a fire hydrant.

A. HYDRANT INSTALLATION BY THE DISTRICT

The charge for installation of a fire hydrant by the District on an existing main or on/with new mains is $36,399 in paved[1] and $23,563 unpaved[2] conditions.

For hydrants installed by applicant on/with new mains installed by the Applicant see Section B below.

B. HYDRANT INSTALLATIONS BY APPLICANT ON APPLICANT-INSTALLED MAIN EXTENSIONS

1. Basic charge for materials and handling for 6-inch fire hydrant	$5,421
2. Material charge for services laterals	$21 per foot

NOTE: Applicants will not be permitted to install a fire hydrant on an existing main.

C. HYDRANT REMOVAL

1. The charge to remove a hydrant located in paved[1] sidewalk	$4,885
2. The charge to remove a hydrant located in unpaved[2] surface	$3,020

D. RELOCATION OF A FIRE HYDRANT

The charge for the relocation of a hydrant will be the charge for the hydrant removal (Section C) plus the charge for the installation of a new hydrant (Section A).

E. SETBACK/OFFSET OF A FIRE HYDRANT

Where the relocation of a fire hydrant does not require a new connection to the main, the charge is $12,021. There is an additional charge of $600 for concrete replacement.

F. REPLACEMENT OF A HYDRANT BODY

To replace an existing hydrant with a MODEL-64 hydrant body or equivalent on a wet barrel, above ground shutoff type hydrant, the replacement charge is $1,951.

[1] Paved conditions are areas already paved and with existing utilities, curb, gutter, and asphalt in place. Paved conditions also include areas where more utilities than sanitary sewer or storm drain exist.
[2] Unpaved conditions are limited to conditions where paving has not previously existed and the only existing utilities are sanitary sewer and storm drain. The conditions of the site must not include asphalt, curb, gutter, paving, or first or final list.

G. INSTALLATION UNDER UNUSUAL CONDITIONS

The above charges apply to all installation charges for fire hydrant installations except when there are unusual or special conditions, for example but not limited to traffic control, permit conditions, underground street utility congestion, known potential for archaeological or paleontological resources, contaminated soils, and streets with multi-layered surface types, which, in the opinion of the District, would result in the need for additional services and materials, including but not limited to added testing and inspection, changes due to project revisions, property rights evaluation, clean soil utility corridor establishment, site conditions or contaminated soil, and any construction by District forces to complete the installation. In such cases, the charge will be based on the District's reasonable estimated cost for the work including all engineering, material, equipment, consumables, labor, and related expenses incidental to the installation.

Schedule G

Water Main Extension Charges

FY 2026

Requests for the installation of a water main extension must comply with all applicable District Regulations Governing Water Service.

A. DISTRICT-INSTALLED MAINS

The charge for District-installed main extensions up to 1,000 feet shall be based on the standard charges as specified below.

1. Charge for engineering, inspection, pipeline materials and appurtenances, and installation of the required mains by the District in unpaved streets and in paved streets, excluding fire hydrants and water service connections (which are covered by Schedules D, E, and F) consists of:

   a. Basic installation charge of $5,327
      plus,

   Linear foot charge, for combined length of main extension of 0 to 1,000 feet:

   In unpaved streets[1]

2-inch PVC pipe	$276 per foot
2-inch Copper pipe	321 per foot
6-inch/8-inch PVC or HDPE pipe	436 per foot
6-inch/8-inch Ductile Iron pipe	474 per foot
6-inch/8-inch Steel pipe	498 per foot
12-inch HDPE pipe	612 per foot
12-inch Steel pipe	674 per foot

   In paved streets[2]

2-inch PVC pipe	$452 per foot
2-inch Copper pipe	497 per foot
6-inch/8-inch PVC or HDPE pipe	598 per foot
6-inch/8-inch Ductile Iron pipe	636 per foot
6-inch/8-inch Steel pipe	660 per foot
12-inch HDPE pipe	777 per foot
12-inch Steel pipe	839 per foot

   b. The above charges apply to all District-installed mains except when there are unusual or special conditions, for example but not limited to traffic control, permit conditions, underground street utility congestion, known potential for archaeological or paleontological resources, contaminated soils, and streets with multi-layered surface types, which, in the opinion of the District, would result in the need for additional services and materials, including but not limited to hydraulic analysis, property rights

[1] Unpaved streets are limited to conditions where paving has not previously existed and the only existing utilities are sanitary sewer and storm drain. The conditions of the site must not include asphalt, curb, gutter, paving, or first or final lift.

[2] Paved streets are areas already paved and with existing utilities, curb, gutter, and asphalt in place. Paved conditions also include areas where more utilities than sanitary sewer or storm drain exist.

evaluation, and/or clean soil utility corridor establishment. In such cases, the charge will be based on the District's reasonable estimated cost for the work including all engineering, material, equipment, consumables, labor, and related expenses incidental to the installation.

2. Charges for Pipe Greater than 12-Inches

   Charges for District-installed mains greater than 12-inches will be based on a District engineering cost estimate.

B. APPLICANT-INSTALLED MAINS

The charge for Applicant-installed main extensions over 1,000 feet shall be based on the following standard charges:

1. Charge for engineering, inspection, and certain pipeline materials, designated below for the installation of the required water mains by the applicant, excluding fire hydrants and water service connections (which are covered by Schedules D, E, and F) consists of:

   a. Basic installation charge of $5,327 plus

   Linear foot charge of:

6-inch/8-inch diameter pipe	$75 per foot
12-inch diameter pipe	$88 per foot
16-inch and larger diameter pipe	See B3 below

   b. The charge to the applicant for District-supplied pipe and fittings (which include valves, valve pot covers, blowoffs, and minor appurtenances as identified by District-furnished drawings and specifications) will be the District's cost for these materials including tax and shipping.

   c. The above charges apply to all Applicant-installed mains except when there are unusual or special conditions, for example but not limited to traffic control, permit conditions, underground street congestion, and streets with multi-layered surface types, which, in the opinion of the District, would result in the need for additional services and materials, including added testing and inspection, changes due to project revisions, property rights evaluation, site conditions or contaminated soil, and any construction by District forces to complete the installation. In such cases, the charge will be based on the District's reasonable estimated cost for the work including all engineering, material, equipment, consumables, labor, and related expenses incidental to the installation.

   In all cases the District will supply valves, valve pot covers, blowoffs, and minor appurtenances as identified by District-furnished drawings and specifications.

2. Credits (where applicable) when pipe to be installed by the applicant is required by the District to be larger than the pipe size needed to serve the applicant or when applicant installs District improvements in conjunction with applicant-installed main extensions will be based on a District engineering cost estimate.

3. Charges for Pipe Greater than 12-Inches

   Charges for Applicant-installed mains greater than 12-inches will be based on a District engineering cost estimate.

Schedule H

Standard Participation Charge (SPC)

FY 2026

A. The Standard Participation Charge for each standard service installed shall be:

Meter Size	Gravity Zone[1]	Pumped Zone[2]
5/8” and 3/4”	$5,300	$7,986
1”	13,250	19,964
1-1/2”	26,500	39,929
2”	42,399	63,886
3”	84,799	127,772
4”	132,498	199,644

The Standard Participation Charge for each meter larger than four inches shall be determined on a case-by-case basis by the District, considering such factors as the projected demand which the service would impose on the District’s system, the maximum intermittent flow rate of the meter compared to a 5/8” meter, and whether the service is solely domestic or is combined with a fire service. In no event shall the standard participation charge for a meter larger than four inches be less than $132,498in gravity zones or $199,644 in pumped zones.

[1] This charge covers general water main oversizing and future water supply.
[2] This charge covers major facilities capacity, water main oversizing and future water supply.

Schedule J

System Capacity Charge (SCC)

FY 2026

A. SCC FOR STANDARD SERVICE[1]

The SCC is calculated based on the applicant's projected average annual demand.

1. Non-Residential Service Connections SCC[2] for meters up to 1-1/2 inches (dollars per connection)

METER SIZE (INCHES)	REGION[3] 1	2	3
5/8	$17,972	$34,186	$38,127
3/4	29,368	48,925	58,351
1	55,887	87,615	103,938
1-1/2	145,746	248,720	256,032

The District reserves the right to request additional information, including specific water use information from the applicant. The District reserves the right to determine the appropriate meter size to serve the applicant's projected demand needs and assess the SCC using this Section (A)(1). If the District determines that the applicant's projected average annual demand exceeds 3,200 gallons per day (gpd) for non-residential service connections or that a meter larger than 1-1/2 inches is required to meet the applicant's projected demand needs, this Section (A)(1) no longer applies. For projected average annual demand exceeding 3,200 gpd for non-residential service connections and/or meters larger than 1-1/2 inches, Section(A)(3) shall be used to determine the SCC based on the applicant's projected average annual demand and the unit charges set forth therein. The District's decision regarding the applicable SCC shall be final.

For service connections with meters larger than 1-1/2 inch see Section 3.

[1] This charge covers the cost of System-wide Facilities Buy-in, Regional Facilities Buy-in and Future Water Supply.
[2] The SCC charged to the applicant will be based on the water meter size required to meet the indoor needs (excluding private fire service needs) and outdoor watering needs of the premises as determined solely by the District based on the plumbing code, the District's review, and water industry standards. The meter(s) that is installed may be larger than the meter size that is used to determine the applicable SCC fee if the service is combined with a private fire service or if a separate irrigation meter is required (See Sections D – Combined Standard and Fire Service and I – Required Separate Irrigation Meter for Single-family Premises.)

[3] REGION	GENERAL DESCRIPTION
1	Central Area (gravity zones West-of-Hills) El Sobrante and North (pumped zones)
2	South of El Sobrante to vicinity of Highway 24 (pumped zone) South from vicinity of Highway 24 (pumped zones) Castro Valley Area (pumped zones) North Oakland Hill Area (pumped zones, formerly 4A)
3	Orinda-Moraga-Lafayette Area (pumped zones) San Ramon Valley and Walnut Creek (pumped and gravity zones)

2. Single-family Service Connections SCC[2] with typical use demand patterns that can be served by meters up to 1-1/2 inches (dollars per connection)

METER SIZE (INCHES)	REGION[3] 1	2	3
3/4	$13,881	$21,494	$40,614
1	19,725	46,059	62,164
1-1/2	25,204	59,365	79,984

The District reserves the right to request additional information, including specific water use information, from the applicant. The District reserves the right to determine the appropriate meter size to serve the applicants projected demand needs and assess the SCC using this Section (A)(2).

Where two or more single-family dwellings are located on one premises the District shall determine the appropriate meter size for each single-family dwelling individually and determine the SCC in for each dwelling in accordance with Section (A)(2).

For service connections with larger meters or greater than 1,940 gpd projected average annual demand for single-family residential service, Section(A)(3) shall be used to determine the SCC based on the applicant's projected average annual demand and the unit charges set forth therein. The District's decision regarding the applicable SCC shall be final.

For an increase or change in water use caused by the creation of an accessory dwelling unit or junior accessory dwelling unit on a premises, installation fees and capacity charges will be imposed only as authorized by Chapter 13 of Division 1 of Title 7 of the Government Code.

3. SCC for Larger Meters

The SCC for service connections with meters larger than 1-1/2 inches shall be determined on a case-by-case basis by the District based on water use information furnished by the applicant and applying the same unit charge and criteria as apply to the SCC for smaller meters. The SCC will be calculated based on the unit charges for each of the four components listed below:

Component	Unit Charge ($/100 gpd)
Post-2000 (Add'l Regions 3C & 3D only)	SCC Region Specific
Regional Facilities Buy-in	SCC Region Specific
System-wide Facilities Buy-in	$4,160
Future Water Supply[4]	1,203

The unit charges for the components that are specific to a SCC Region are:

Region	Post-2000 Component	Regional Facilities Buy-In Component
1	n/a	$1,942
2	n/a	4,872
3	n/a	2,925
3C	$8,204	2,443
3D	8,204	2,443

In no instance will the SCC for a meter larger than 1-1/2 inches be less than the 1-1/2 inch charge from the appropriate Section 1 or 2, above.

The SCC will be determined by multiplying the sum of the unit charge of the four components by the water use information furnished by the applicant.

If the District has determined, based on water use information furnished by the applicant, that a meter size larger than 1-1/2 inches is required to meet the applicant's projected demand needs or if the projected average annual demand exceeds 3,200 gpd (non-residential) or 1,940 gpd (single-family residential), the SCC shall be calculated pursuant to this subdivision irrespective of the arrangement of water metering or meter size at the premises.

[4] The Future Water Supply component for Region 3C is based on 1993 agreement (see Section B1).

4. SCC for Standard Service to Multi-Family Premises

The System Capacity Charge for water service at multi-family premises shall be as listed below.

	Multi-Family Premises Dollars per Dwelling		
	REGION[5]		
	1	2	3
For Dwellings 500 square feet and under[6]	$6,940	$9,724	$7,874
For Dwellings Over 500 square feet	8,767	12,282	9,946

The above SCC shall apply regardless of the arrangement of water metering or meter size at the premises; however, the District may limit the size and number of service connections to a combined capacity appropriate to the anticipated water use at the premises. No additional SCC shall be applicable to provide irrigation for landscaping on the premises for landscape areas up to 5,000 square feet. All other rates and charges shall be based on actual number and size of meters and does not apply to the requirements listed below.

An SCC shall be applicable for separate meters installed to serve landscape areas greater than 5,000 square feet and for other water uses in the vicinity of the multi-family premises, such as irrigation of open space areas, parks, roadway medians, golf courses, community clubhouse and recreational facilities, and areas designated for public use. The SCC shall be based on meter size as provided under A.1 above. If these other water uses are included in the water service connection to the multi-family premises, the District shall, for purposes of determining the applicable SCC, determine the equivalent meter size for these uses based on plumbing code and water industry standards, as if there were a separate service connection.

For an increase or change in water use caused by the creation of an accessory dwelling unit or junior accessory dwelling unit on a premises, installation fees and capacity charges will be imposed only as authorized by Chapter 13 of Division 1 of Title 7 of the Government Code.

[5] Same regions as described in A.2.

[6] The applicant must submit sufficient documentation, as determined by the District, from the local building department that shows the dwelling living space square footage is 500 square feet or less for any dwelling to qualify for the 500 and under square foot MFR SCC. Documentation can be approved architectural drawings or other approved records of the dwelling living space.

B. SEPARATE SCC FOR STANDARD SERVICE FOR ADDITIONAL REGIONS[7]

The System Capacity Charge shall be as follows (dollars per connection):

1. Non-residential water service at premises other than multi-family premises shall be as follows (dollars per connections)

METER SIZE (INCHES)	ADDITIONAL REGION[8] 3C[9]	3-D
5/8	n/a	$124,083
3/4	n/a	186,125
1	n/a	310,828
1-1/2	n/a	621,657

For service connections with larger meters see Section 3 below.

2. Single-family service connections shall be as follows (dollars per connections)

METER SIZE (INCHES)	ADDITIONAL REGION[8] 3C[9]	3-D
3/4	$120,665	$124,083
1	201,510	207,219
1-1/2	403,020	414,438

For an increase or change in water use caused by the creation of an accessory dwelling unit or junior accessory dwelling unit on a premises, installation fees and capacity charges will be imposed only as authorized by Chapter 13 of Division 1 of Title 7 of the Government Code. For service connections with larger meters see Section 3.

[7] This charge covers the cost of System-wide Facilities Buy-In, Regional Facilities Buy-In and Future Water Supply. The Additional Regions are low-density, residential in nature. It is not anticipated that meters larger than 3/4-inch (excluding fire flow requirements) will be installed in these Regions.

[8] ADDITIONAL REGION	GENERAL DESCRIPTION
3-C	South of Norris Canyon Road (pumped zones)
3-D	South of Norris Canyon Road outside Wiedemann Ranch (pumped zone)

[9] The Future Water Supply component of the SCC for Region 3C is set by the July 20, 1993 Wiedemann Agreement, indexed to the U.S. City Average of the Consumer Price Index and used by EBMUD to fund conservation programs. The total Future Water Supply component of the SCC for the common areas in Region 3C shall be paid as a condition for the issuance of the first water meter for the common area. The SCC for non-residential services (e.g., common area irrigation) shall be uniquely calculated in accordance with the Wiedemann Agreement.

3. SCC for Larger Meters

   The SCC for service connections with meters larger than 1-1/2 inches shall be determined on a case-by-case basis by the District based on water use information furnished by the applicant and applying the same cost components and criteria as apply to the SCC for smaller meters. (See Section A.3)

4. Separate SCC for Standard Service to Multi-Family Premises

   The SCC for water service at multi-family premises shall be as listed below.

Multi-Family Premises Dollars per Dwelling		
	ADDITIONAL REGIONS[10]	
	3-C	3-D
For each Dwelling	$46,553	$43,549

The above SCC shall apply regardless of the arrangement of water metering or meter size at the premises; however, the District may limit the size and number of service connections to a combined capacity appropriate to the anticipated water use at the premises. No additional SCC shall be applicable for separate meters installed to provide irrigation for landscaping on the premises for landscape areas up to 5,000 square feet. All other charges shall be based on actual number and size of meters and do not apply to the requirements listed below.

An SCC shall be applicable for separate meters installed to serve landscape areas greater than 5,000 square feet and for other water uses in the vicinity of the multi-family premises, such as irrigation of open space areas, parks, roadway medians, golf courses, community clubhouse and recreational facilities, and areas designated for public use. The SCC shall be based on meter size as provided under B.1 above. If these other water uses are included in the water service connection to the multi-family premises, the District shall, for purposes of determining the applicable SCC, determine the equivalent meter size for these uses based on plumbing code and water industry standards, as if there were a separate service connection.

For an increase or change in water use caused by the creation of an accessory dwelling unit or junior accessory dwelling unit on a premises, installation fees and capacity charges will be imposed only as authorized by Chapter 13 of Division 1 of Title 7 of the Government Code.

[10] Same regions as described in B.1.

C. LOW-PRESSURE SERVICE

Where a larger meter is installed because of low-pressure conditions, the applicable System Capacity Charge shall be determined on the basis of the size of the meter which would be required for a standard service as determined by the District based on plumbing code and water industry standards. All other rates and charges shall be based on actual meter size.

D. COMBINATION STANDARD AND FIRE SERVICE

Where a meter is installed to provide both standard service and a supply to a private fire protection system, at other than multi-family premises, the applicable System Capacity Charge shall be based on the meter size required for standard service exclusive of the capacity for supplying the fire protection system as determined by the District based on plumbing code, fire protection code and water industry standards. The installation charges shown in Schedule D and all other rates and charges pertaining to the service shall be based on the actual size of the meter that is installed.

E. FIRE SERVICES AND STANDBY SERVICES

For fire services and standby services (additional service connections for security of supply), there shall be no System Capacity Charges.

F. ADDITIONAL WATER USE ON PREMISES RECEIVING SERVICE

The System Capacity Charge applicable to enlargement of an existing service at other than multi-family premises shall be based on the difference in SCC for the new service size and the existing service size.

The District may assess additional System Capacity Charges to an existing service at other than multi-family premises with services larger than 1-1/2” in accordance with section A.3.

If additional dwellings are constructed on premises subsequent to the installation of service and payment of an SCC under A or B, then the SCC applicable to each additional dwelling shall be immediately due and payable.

G. CREDIT FOR EXISTING SERVICES

Where one or more new services will replace one or more existing or prior services or will expand an existing service to a premises where an SCC was paid to initiate the water service, a credit will be given toward the new SCC based on the customer classification, meter size or water use information that was used to calculate the initial SCC payment (see Section A – SCC for Standard Service). For instances where the existing or prior services were installed prior to 1983 and no SCC was paid, the SCC credit for meter sizes under 2” will be based on Sections A – SCC for Standard Service. For existing or prior services with meter sizes 2” and greater where no SCC was paid, the annual average of the past ten years of water consumption will be used to determine the SCC credit, but in no instance will the credit be less than that of a 1.5” meter size for the customer classification listed in Sections A.1 and A.2 – SCC for Standard Service. No SCC credit will be given unless prior service to

the premises is verified. If the SCC is paid with the service connection to be completed by meter installation at a later date, and existing service(s) are to remain in service until that time, the applicable credit for the existing service(s) will be in the form of a refund when the existing services are removed. The SCC credit cannot be applied to a standby meter, fire service meter, or in the case of a dual service meter, the portion of the meter oversized for the private fire protection system. Where the initial SCC payment was made under Schedule J Section I – Required Separate Irrigation Meter for Single-family Premises, the SCC credit cannot be applied to the separate irrigation meter without a SCC credit on the residential meter. The SCC credit for an existing service can only be applied to the premises where the existing service is located. “Premises” is defined in Section 1 of the District’s Regulations Governing Water Service.

For a common area meters installed under the July 20, 1993 Wiedemann Agreement, credit toward a new SCC for these meters will be based on the actual SCC payment for each meter installed, not based on the size of the existing meter.

No credit will be provided for Accessory Dwelling Units that did not pay an initial SCC regardless of metering arrangements.

H. TEMPORARY CONSTRUCTION SERVICE

A System Capacity Charge paid on a temporary construction service will be refunded if said service is removed within a 1-year period after installation.

I. REQUIRED SEPARATE IRRIGATION METER FOR SINGLE-FAMILY PREMISES

If an irrigation meter is required for a single-family premises because the irrigable landscape area meets or exceeds the applicable threshold in Section 31 of the Regulations, two meters will be installed – one for the indoor and private fire service (if applicable) needs of the building and a separate meter dedicated for irrigation. One single-family premises SCC shall be applicable based on the hydraulic capacity needed to serve the irrigation and indoor needs. The hydraulic capacity of the installed meter or meters will be equal to or exceed the hydraulic capacity of the meter size that was charged in the SCC fee. The installation charges shown in Schedule D and all other rates and charges pertaining to the service(s) based on the actual size of the meter(s) that are installed shall apply.

J. NONPOTABLE WATER SERVICE

1. Nonpotable Water Service Connections (dollars per connection)

METER SIZE (INCHES)	REGION 1	2	3
5/8	$2,959	$4,018	$5,533
3/4	4,836	5,750	8,468
1	9,202	10,297	15,084
1-1/2	23,998	29,230	37,158

All SCCs for nonpotable water service connections with meters larger than 1-1/2 inches shall be determined by applying the Future Water Supply Component unit charge to the defined projected water demand approved by the District. The SCC will not be less than the 1-1/2 inch meter charge by region noted above.

K. POTABLE AND NONPOTABLE SERVICES

An SCC shall be applicable for separate meters installed to provide potable and nonpotable standard service, based on the meter size(s) for each service.

L. ADJUSTMENT OF SCC FOR WATER-CONSERVING LANDSCAPING ON PUBLICLY OWNED PROPERTY

To further encourage water conservation, the SCC for a water service connection exclusively for irrigation of landscaping on property owned by a public agency may be reduced or not required based on long-term water service needs after an initial planting establishment period of not more than three years (the “initial period”); provided that (1) the landscape plan incorporates drought-tolerant and other low-water-use planting materials on a major part of the landscaped area, and (2) the long-term water need would result in replacement of the initial water meter with a smaller meter or water service would be discontinued and removed at the end of the initial period, as solely determined by the District.

A public agency applying for water service under such conditions shall submit a written request to the District prior to the time of payment of the SCC. The request shall set forth in detail the facts supporting an adjustment of the SCC, shall include information and plans clearly describing the planting materials and irrigation system, and shall include data and calculations clearly demonstrating the estimated initial and long-term water needs.

If the District determines that the SCC can be based on a smaller meter or discontinuation of service after the initial period, the public agency shall enter into a water service agreement which provided for (1) payment of the reduced SCC prior to installation of service; (2) verification of the long-term need at the end of the period; and (3) payment of the additional SCC required if the initial meter is not to be replaced, if the replacement meter is larger than

initially determined, or if water service is not discontinued and removed. If additional SCC payment is required, it shall be based on the charges in effect at the time of initial SCC payment, and shall be due and payable within 30 days of written notice from the District. The agreement shall be binding upon all subsequent owners of the property and shall be recorded.

Installation charges for the service connection shall be based on the meter size initially installed.

The above-mentioned SCC adjustments do not apply to nonpotable water service accounts.

Schedule N

Water Demand Mitigation Fees

FY 2026

The Water Demand Mitigation Fee funds District conservation programs that are intended to achieve water savings that offset water demand from development within the territory or development where the fees are collected. The Water Demand Mitigation Fee is payable at the time application for service is made or prior to release of the distribution system pipelines and related appurtenances when the installation of water main extensions are required.

A. WATER DEMAND MITIGATION FEES FOR "THE MEADOWS" TERRITORY

For service connections within "The Meadows" territory[1] payment of a Water Demand Mitigation Fee shall be required in addition to all other applicable fees and charges, including the applicable System Capacity Charge (SCC).

1. Non-Residential Service Connections (dollars per connection)

METER SIZE (INCHES)	WATER DEMAND MITIGATION FEE FOR STANDARD SERVICE IN THE MEADOWS TERRITORY
5/8	$8,195
3/4	11,800
1	18,356
1-1/2	35,401

2. Single Family Service Connections (dollars per connection)

METER SIZE (INCHES)	WATER DEMAND MITIGATION FEE FOR STANDARD SERVICE IN THE MEADOWS TERRITORY
5/8	$8,024
3/4	11,800
1	18,356
1-1/2	35,401

3. The Water Demand Mitigation Fee for service connections with meters larger than 1-1/2 inches shall be determined on a case-by-case basis by the District based on water use information furnished by the applicant and applying the applicable SCC Future Water Supply component and multiplier (1.09) established by the Board of Directors for smaller meters.

[1] As defined in Contra Costa Local Agency Formation Commission Resolution No. 96-33, adopted August 13, 1997.

4. For phased developments within The Meadows territory, the Water Demand Mitigation Fee is payable for all connections within the phase prior to release of the distribution system pipelines and related appurtenances.

B. WATER DEMAND MITIGATION FEES FOR "THE WENDT RANCH" TERRITORY

For service connections within "The Wendt Ranch" territory[2] payment of a Water Demand Mitigation Fee shall be required in addition to all other applicable fees and charges, including the applicable System Capacity Charge (SCC).

1. Non-Residential Service Connections (dollars per connection)

METER SIZE (INCHES)	WATER DEMAND MITIGATION FEE FOR STANDARD SERVICE IN THE WENDT RANCH TERRITORY
5/8	$10,525
3/4	15,157
1	23,577
1-1/2	45,470

2. Single Family Service Connections (dollars per connection)

METER SIZE (INCHES)	WATER DEMAND MITIGATION FEE FOR STANDARD SERVICE IN THE WENDT RANCH TERRITORY
5/8	$10,306
3/4	15,157
1	23,577
1-1/2	45,470

3. The Water Demand Mitigation Fee for service connections with meters larger than 1-1/2 inches shall be determined on a case-by-case basis by the District based on water use information furnished by the applicant and applying the applicable SCC Future Water Supply component and multiplier (1.40) established by the Board of Directors for smaller meters.

4. For phased developments within The Wendt Ranch territory, the Water Demand Mitigation Fee is payable for all connections within the phase prior to release of the distribution system pipelines and related appurtenances.

[2] As defined in Contra Costa Local Agency Formation Commission Resolution 97-5, adopted March 12, 1997.

C. WATER USE OFFSET FEES FOR THE WIEDEMANN RANCH DEVELOPMENT[3]

For service connections within "The Wiedemann Ranch Development", payment of a Water Use Offset Fee shall be required in addition to all other applicable fees and charges, including the System Capacity Charge (SCC).[4]

1. Common Area Offset Fee

   The total Water Use Offset Fee for common areas in The Wiedemann Ranch Development is $90,875, and payable as a condition of issuance of the first meter for the common area.[5]

2. Single Family Service Connections

   The Water Use Offset Fee for each residential lot in The Wiedemann Ranch Development is $9,070, which amount shall be indexed using the same index as for the common area offset fee.

D. ADDITIONAL WATER USE OFFSET FEES FOR THE WIEDEMANN RANCH DEVELOPMENT[3]

For water service within the Wiedemann Ranch Development, payment of Additional Water Use Offset Fees shall be required in the event the annual water budget[6] is exceeded.

1. The Additional Water Use Offset Fee shall be determined by the number of gallons of water used during the average of the two consecutive years in excess of the annual water budget times the per gallon fee of $19.58.[7]

[3] The Wiedemann Ranch Development, SCC Region 3A, a 439 acre development in Contra Costa County, is described with particularity in Exhibit A to the July 20, 1993 Agreement Between EBMUD and HCV & Associates, Ltd., Wiedemann Ranch, Inc. and Sue Christensen ("Wiedemann Agreement").
[4] The Wiedemann Agreement specifies the amount and other terms related to the Future Water Supply Component of the SCC for the Wiedemann Ranch Development.
[5] The Water Use Offset Fee shall be indexed to the U.S. City Average of the Consumer Price Index issued by the U.S. Department of Labor each calendar year or portion thereof from the July 20, 1993 date of the Wiedemann Agreement to the date of payment of the offset fee.
[6] The Wiedemann Agreement specifies the formula for calculating the annual water budget and the specific methodology for calculating and collecting the additional water use offset fee.
[7] The Wiedemann Agreement specifies the terms related to the Additional Water Use Offset Fee. The Additional Water Use Offset Fee shall be indexed to the U.S. City Average of the consumer Price Index issued by the U.S. Department of Labor for each calendar year or portion thereof from the July 20, 1993 date of the Wiedemann Agreement to the date of payment of the additional water use offset fee.

E. WATER DEMAND MITIGATION FEES FOR CAMINO TASSAJARA INTEGRATED PROJECT[8]

For service connections within the Camino Tassajara Integrated Project[9], payment of a Water Demand Mitigation Fee (WDMF) shall be required in addition to all other applicable fees and charges including the applicable System Capacity Charge (SCC). The Board of Directors adopted Section 3D to the Water Service Regulations in January 2003 to codify the WDMF and other conservation requirements imposed on the project territory by the County and Local Agency Formation Commission.

1. Non-Residential Service Connections (dollars per connection)

METER SIZE (INCHES)	WATER DEMAND MITIGATION FEE FOR STANDARD SERVICE IN THE CAMINO TASSAJARA INTEGRATED PROJECT
5/8	$10,146
3/4	14,618
1	22,731
1-1/2	43,836

2. Single Family Service Connections (dollars per connection)

METER SIZE (INCHES)	WATER DEMAND MITIGATION FEE FOR STANDARD SERVICE IN THE CAMINO TASSAJARA INTEGRATED PROJECT
5/8	$6,970
3/4	10,243
1	15,954
1-1/2	30,747

3. The WDMF for service connections with meters larger than 1-1/2 inches shall be determined on a case-by-case basis by the District based on water use information furnished by the applicant and applying the applicable SCC Future Water Supply component and multiplier (1.61) established by the Board of Directors for smaller meters.

[8] The Water Demand Mitigation Fee shall be indexed to the unit charge of the Future Water Supply component of the EBMUD System Capacity Charge.

[9] As generally described in the October 9, 2002 Miscellaneous Work Agreement between the District, Shapell Industries, Ponderosa Homes II, and Braddock and Logan Group II.

The WDMF for new water service at multi-family premises shall be as listed below. For purposes of this Schedule N, "multi-family premises" shall mean premises with two or more attached or separate residential dwelling units, rental or owner-occupied, which is determined by the District to be a single premises for receiving water service, provided that each separate dwelling unit of a multi-family premises shall be separately metered as specified in Sections 2 and 3 of the District's Regulations Governing Water Service.

Multi-Family Premises – Dollars Per Dwelling Unit (DU)	
Each of the first 10 DU in a single structure	$4,182
Each additional DU in same structure	3,346

The above WDMF shall apply regardless of the arrangement of water metering or meter size at the premises; however, the District may limit the size and number of service connections to a combined capacity appropriate to the anticipated water use at the premises.

No additional WDMF shall be applicable for separate meters installed to provide irrigation for landscaping on the premises in the immediate area contiguous to the dwelling unit structures, provided such landscaped area is to be used exclusively by the residents. All other rates and charges shall be based on actual number and size of meters and does not apply to the requirements listed below.

A WDMF shall be applicable for separate meters installed to serve other water uses in the vicinity of the multi-family premises, such as irrigation of open space areas, parks, roadway medians, recreational facilities, and areas designated for public use. The WDMF shall be based on meter size as provided under E.1 above. If these other water uses are included in the water service connection to the multi-family premises, the District shall, for purposes of determining the applicable WDMF, determine the equivalent meter size for these uses based on plumbing code and water industry standards, as if there were a separate service connection.

4. The WDMF is payable for all connections within phased developments prior to release for construction, the distribution system pipelines and related appurtenances.

5. Water use in excess of 120 percent of the annual water budget[10] shall be subject to an Additional WDMF (on a per-occurrence basis). The Additional WDMF shall be determined by multiplying the amount of water used in excess of 100 percent of the annual water budget times the per gallon fee of $0.65 per gpd.

[10] The water budget shall be established pursuant to the October 9, 2002 Miscellaneous Work Agreement referenced in Footnote 2.

F. WATER DEMAND MITIGATION FEES FOR GALE RANCH PHASE 2, SUBDIVISION 9134[11]

For service connections within Gale Ranch Phase 2, Subdivision 9134, payment of a Water Demand Mitigation Fee (WDMF) shall be required in addition to all other applicable fees and charges including the applicable System Capacity Charge (SCC).

1. Non-Residential Service Connections (dollars per connection)

METER SIZE (INCHES)	WATER DEMAND MITIGATION FEE FOR STANDARD SERVICE IN THE GALE RANCH PHASE 2 SUBDIVISION 9134
5/8	$9,721
3/4	14,000
1	21,765
1-1/2	42,000

2. Single Family Service Connections (dollars per connection)

METER SIZE (INCHES)	WATER DEMAND MITIGATION FEE FOR STANDARD SERVICE IN THE GALE RANCH PHASE 2 SUBDIVISION 9134
5/8[12]	$6,673
3/4	9,818
1	15,259
1-1/2	29,433

3. The WDMF for service connections with meters larger than 1-1/2 inches shall be determined on a case-by-case basis by the District based on water use information furnished by the applicant and applying the applicable SCC Future Water Supply component.

   No additional WDMF shall be applicable for separate meters installed to provide irrigation for landscaping on the premises in the immediate area contiguous to the dwelling unit structures, provided such landscaped area is to be used exclusively by the residents. All

[11] The Water Demand Mitigation Fee shall be indexed to the unit charge of the Future Water Supply component of the EBMUD System Capacity Charge.
[12] 5/8" fee based on 32,594 gpd land use unit demands (LUDS) minus 10,884 gpd middle school demand credit divided by 63 residential units resulting in 345 gpd/residential unit.

other rates and charges shall be based on actual number and size of meters and does not apply to the requirements listed below.

A WDMF shall be applicable for separate meters installed to serve other water uses in the vicinity of the multi-family premises, such as irrigation of open space areas, parks, roadway medians, recreational facilities, and areas designated for public use. The WDMF shall be based on meter size as provided under F.1 above. If these other water uses are included in the water service connection to the multi-family premises, the District shall, for purposes of determining the applicable WDMF, determine the equivalent meter size for these uses based on plumbing code and water industry standards, as if there were a separate service connection.

Section 1

Explanation of Terms Used in these Regulations

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COMMON AREA shall mean a room, unit, or area of a building that is outside of the residential or commercial units, and is for the sole use of the tenants or occupants.

DISTRICT shall refer to the East Bay Municipal Utility District unless otherwise specified.

ELEVATION SURCHARGE shall mean that charge applied to customers' accounts where meters are served by pressure zones with an elevation designator of two (2) or more in the District's pressure zone designations. The charge shall be computed in accordance with Schedule A, Rate Schedule for Water Service, Section D. The Elevation Surcharge recovers the additional costs incurred for pumping water to higher elevations.

EXPANDED SERVICE shall refer to any upgrade, change, modification to existing standard service that increases the size of the meter, or increases to the annual average water use resulting from improvements to the existing structure(s) and new construction.

FRONT FOOT CHARGE shall mean the charge applicable to a premises when a main is or has been brought to the principal frontage of the premises to make service available to the premises. This charge shall be computed in accordance with the provisions of Section 4, and shall generally be the proration of the cost of extending the main based on the width of the premises fronting on and entitled to service from the main extension. The front foot charge shall not apply to premises already entitled to service, according to District requirements, on or before the date the main extension is installed. Where a front foot charge is applicable, it must be paid before a service will be installed.

HYDRANT or PUBLIC FIRE HYDRANT shall mean a fire hydrant that is connected to a main by a lateral, owned by the District, and located within the public right-of-way or District-owned right-of-way.

> PRIVATE FIRE HYDRANT shall mean a fire hydrant that is located downstream of a private fire service.

IRRIGABLE LANDSCAPE AREA shall mean the area of a premises less the aggregate area of structure footprints, impervious and pervious hardscape and undisturbed open space within that premises.

IRRIGATED LANDSCAPING shall mean the total aggregated area or footprint of irrigated landscape for a premises, which does not include open space or the non-irrigated area.

> The terms “Irrigable Landscape Area” and “Irrigated Landscaping” may apply to more than one premises, as determined solely by the District, where the multiple premises are contiguous and the managing entity for the irrigation water service to those multiple premises is a single person or entity, such as a city or a homeowners’ association.

LATERAL shall refer to the District-owned pipeline connecting a meter or hydrant to the main.

MAIN shall refer to District-owned pipelines that are not part of a service connection or hydrant.

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MAJOR FACILITIES shall mean storage reservoirs, pumping plants, transmission mains, water treatment plants, and appurtenances, including necessary properties and rights of way.

METER shall mean the entire meter assembly, which may include appurtenances or devices owned and installed by the District in connection with a service connection.

DEDICATED IRRIGATION METER shall mean the entire meter assembly dedicated for outdoor landscape water use, which may include appurtenances or devices owned and installed by the District or applicant, as solely determined by the District, as provided in Sections 3 and 31 of these Regulations.

SUBMETER shall mean a non-District-meter that is installed downstream of the District's meter. The submeter or submeter data must be readily accessible for review by those utilizing the water, and is wholly maintained and serviced by the owner/agent of the premises.

PREMISES shall mean a parcel of real estate, including any improvements thereon, which is determined by the District to be a single premises for purposes of receiving, using and paying for service. In making this determination, the District shall take into consideration such factors as assessor parcel lines, whether the parcel could reasonably be subdivided, whether the parcel is being used for a single enterprise, and whether the parcel is divided by a public or a private street, but in any case, the District's determination shall be final.

MULTI-FAMILY PREMISES shall mean premises designated for multi-family use by the local land use authority which may include but are not limited to apartments, duplexes, condominiums, or other dwelling units not classified as single-family or premises intended for or with structure(s) constructed with independent living facilities for one or more persons

MULTI-OCCUPANCY COMMERCIAL/INDUSTRIAL PREMISES shall mean premises designated for commercial/industrial use by the local land use authority, with two or more attached or separate commercial or industrial occupancy units, rental or owner-occupied, which is determined by the District to be a single premises for receiving water service.

SINGLE FAMILY PREMISES shall mean a premises designated for single-family use by the local land use authority or premises intended for or with structure(s) constructed for occupancy by a single-family as determined by the District with one or more attached or separate structures, rental or owner-occupied, providing permanent provisions for living, cooking, sanitation, and separate ingress/egress.

PRESSURE ZONE shall mean a portion of the water distribution system in which all premises are served through meters within a specific range of elevations and supplied by the same major facilities through an interconnected pipeline network. The upper limit of the pressure zone is 100 feet below the overflow elevation of the reservoir providing service, and the lower limit is determined by the upper limit of the next lower pressure zone or an elevation approximately 300 feet below the overflow elevation of the reservoir. Gravity Zones are those pressure zones which receive their water supply by gravity flow from the treatment plants and are identified by the prefixes "G" and "H" in the District's pressure zone

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designations. Pumped Zones are those pressure zones which receive their water supply from the treatment plants by pumping and are identified by the prefixes "A" through "F" in the District's pressure zone designations.

PRINCIPAL FRONTAGE shall mean that part of the perimeter of the major portion of the premises where the principal use of the property is located, which fronts on a public street or private road or driveway from which the premises generally receives access, public services and utilities, as determined by the District. Principal use does not include easements, rights of way, or a relatively narrow portion of a premises used for access or other purpose.

REASONABLY AVAILABLE SERVICE shall mean that a service connection installed at the principal frontage of the premises will provide adequate pressure and flow for normal operation of plumbing fixtures, water using appliances, requirements set by the responsible fire protection agency, and irrigation. In determining reasonably available service, the District will consider, relative to the service location and the applicable pressure zone, the elevation of the existing or proposed building on the premises, the distance of the building site from the meter location and any pressure and flow requirement for fire protection.

RENOVATION shall mean any improvements to existing structure(s) that would change the Business Classification of the existing structure(s) and/or increase the average annual water use.

RETROFITS shall mean the conversion or modification of existing water using fixtures, appliances, equipment and landscaping such that they are suitable for water service.

SEPARATE STRUCTURE shall mean a distinct building with water using fixtures.

SERVICE shall mean the furnishing of water (potable or nonpotable) to a customer through a service connection.

BRANCH SERVICE shall refer to a service connection with two or more meters per service connection.

CONDITIONAL SERVICE shall mean a service connection to a premises at other than the principal frontage as provided in Section 3 of these Regulations.

DUAL SERVICE shall mean a combination standard and fire service.

LIMITED/LOW/HIGH PRESSURE SERVICE shall mean a water service connection provided under a written agreement for a service with special conditions when standard service is not reasonably available. See Section 8, 8A, and 8B of these Regulations.

PRIVATE FIRE SERVICE shall mean a water service connection provided under written agreement for the sole use of fire protection to a premises, further defined in Section 3 of these Regulations.

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STANDARD SERVICE shall mean a service other than a private fire service, installed within the District's service area, adjacent to the principal frontage of the premises to be served, which service is needed for immediate use to supply an identified function directly related to such premises.

SERVICE CONNECTION shall mean the necessary piping and equipment from the main to and including the meter or battery of meters. Reference to a service connection by size shall mean the size of the meter.

STANDARD PARTICIPATION CHARGE (SPC) shall mean the charge paid as a contribution towards the cost of future general oversizing of water mains and to provide major facilities capacity for service to new customers. This charge is paid in lieu of the System Capacity Charge by certain applicants who applied for service on or before June 28, 1983. The SPC also includes a component for the allocated cost of providing a future water supply to meet the long-term increase in water demand in the District.

SYSTEM CAPACITY CHARGE (SCC) shall mean the charge required of all applicants for water service to premises where installation of a service connection is required, including expanded service, as solely determined by the District. The charge to be paid depends on the regional location and the applicable meter size, the estimated annual average water use as determined by the District for large meters not covered in Schedule J based on water use information furnished by the applicant, or number of units. The charge is payment for the costs allocated to providing capacity for water service to applicants within each region, including components for major facilities in the District's distribution system master plan, major facilities constructed prior to the master plan, and water main oversizing. The SCC also includes a component for the allocated cost of providing a future water supply to meet the long-term increase in water demand in the District. The charge shall be computed in accordance with Schedule J of the Rates and Charges.

UNIT shall mean and apply to a Dwelling Unit, Accessory Dwelling Unit, Commercial/Industrial Unit, Live/Work Unit, or Work/Live Unit within a premises as defined below, unless specified otherwise.

ACCESSORY DWELLING UNIT shall be as defined by Chapter 13 of Division 1 of Title 7 of the California Government Code.

JUNIOR ACCESSORY DWELLING UNIT shall be as defined by Chapter 13 of Division 1 of Title 7 of the California Government Code.

DWELLING UNIT shall mean an attached or detached rental or owner-occupied residential unit on a premises, which provides complete independent living facilities for one or more persons, including one or more permanent provisions for living, sleeping, cooking, sanitation, and separate ingress/egress as solely determined by the District.

COMMERCIAL/INDUSTRIAL UNIT shall mean an attached or detached rental or owner-occupied unit used directly or indirectly in connection with any non-residential, or business undertaking, which provides complete independent facilities for one or more persons, including

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one or more permanent provisions for sanitation, and separate ingress/egress as solely determined by the District.

LIVE/WORK UNIT shall be considered an attached or detached unit of a mixed-use premises that accommodates both residential and non-residential activities, but emphasizes the accommodation of residential activities per Local Land Use designation, as solely determined by the District. For the purpose of System Capacity Charges, a Live/Work Unit shall be considered as residential.

WORK/LIVE UNIT shall be considered an attached or detached unit of a mixed-use premises that accommodates both residential and non-residential activities, but emphasizes the accommodation of commercial activities per local land use designation, as solely determined by the District. For the purpose of System Capacity Charges, a Work/Live Unit shall be considered as non-residential.

WATER EFFICIENCY REQUIREMENTS shall include all water-using fixtures, technologies, practices, and ordinances in accordance with Section 31 of these Regulations.

Section 4

Main Extensions

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SECTION 4
MAIN EXTENSIONS

A. EXTENDING MAINS

In general, whenever extension of a water main within the District boundaries is required because a principal part of the premises to be served does not lie along an available water main with adequate flow and pressure, the extension will be installed after an agreement has been executed by the applicant and the District for payment by applicant of all applicable charges. The manner of determining the charges is set forth in this section and is based on the policy of the District that applicants for water service shall pay the full cost of facilities required to provide the service. The charges shall be as described in the Schedule of Rates and Charges.

1. MAIN EXTENSIONS LESS THAN 1,000 FEET IN LENGTH

   A water main extension of less than 1,000 feet will be installed only by the District and in accordance with the terms and conditions of an agreement between the applicant and the District.

2. MAIN EXTENSIONS OF 1,000 FEET AND OVER IN LENGTH

   A water main extension of 1,000 feet and over in length shall be installed by the applicant in accordance with the terms and conditions of an agreement between the applicant and the District. However, a water main extension of 1,000 feet and over in length involving multiple applicants acting as individuals, or where a public agency is the applicant, may be installed by the District in accordance with the terms and conditions of an agreement between the applicants and the District.

   When the District requires polyvinyl chloride (PVC) or high density polyethylene (HDPE) pipe materials for main extensions, the applicant shall supply, at its own expense, the pipe materials and fittings. The District will supply valves, valve pot covers, blowoffs and minor appurtenances at the applicant's expense. Materials to be supplied by the District will be detailed on the District prepared drawings and specifications. When the District requires main extensions of pipe materials other than PVC or HDPE, the District will supply the pipe materials and fittings, also at the applicant's expense. However, in those few instances when an applicant installation requires 20-inch or larger pipe, the District may permit the applicant to furnish the pipe.

   The pipe material supplied by the applicant and the work performed must comply with the drawings and specifications furnished by the District and shall be subject to District inspection at all times. The applicant will be required to pay in advance the charges for any District supplied materials, engineering and inspection services, and related overhead. The applicant must also furnish, in form and with sureties acceptable to the District, a faithful performance bond, or other security acceptable to the District, a payment bond, and certificates of insurance. Upon completion of the installation in accordance with the agreement, and acceptance by the District, title to the extension shall be transferred to the District by the applicant.

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Water service shall not be provided by the extension of a water main where the meter(s) for the premises concerned will be located at an elevation of less than 100 feet below the overflow level of the reservoir supplying such main, except as provided in Sections 4.C.4 and 8-A.

Main extensions incorporating capacity for future customers in a region will be financed in part by System Capacity Charges. Such improvements will not be installed upon the request of one or more applicants to serve particular premises.

B. GENERAL PROVISIONS CONCERNING MAIN EXTENSIONS

1. General

   a. The pipe specifications, point of commencement, and all other requirements for main extensions shall be determined by the District.

   b. All water main extensions shall be sized and located to meet estimated water service requirements of District customers, including projected water demands and fire flows.

   c. In cases where water quality is a concern, such as low water use that could potentially lead to high water age or incremental residence time, new water mains shall be sized to minimize water quality operations while meeting the estimated water service requirements, including projected water demands and, to the extent feasible, fire flows. The appropriate pipe material of new water mains shall also be evaluated in such cases.

   d. The appropriate pipe material to be used for new water mains shall also be evaluated for special circumstances, such as in steep terrain, narrow rights-of-way, potential landslide, liquefiable soil, corrosive soil areas, dead-end mains or creek, bridge, freeway, and railroad crossings where the use of conventional open-trench installation methods may not be feasible and/or where conventional installation methods may be cost prohibitive. Specific pipe material requirements for design of new water mains shall be in accordance with District Engineering Standards .

   e. A water main extension will not be permitted solely to supply a hydrant or private fire service unless it is determined by the District that such extension will not adversely affect the distribution system.

2. Size of Water Mains

   a. The minimum size of water mains shall be as follows:

      - In low- and medium-density residential areas, except as provided below, the minimum size shall be 6 inches. If water quality is a concern, as solely determined by the District, a 4-inch main extension shall be considered if estimated water service requirements and fire flow can be met. An applicant shall

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be charged for the size of the main extension needed to meet the water service requirements, including fire flow, for the project.

- In high-density residential, commercial, and industrial areas, and on long streets without side connections, such as on terraced hillsides, the minimum size shall be 8 inches. If water quality is a concern, as solely determined by the District, a 6-inch main extension shall be considered if estimated water service requirements and fire flow can be met. An applicant shall be charged for the size of the main extension needed to meet the water service requirements, including fire flow, for the project.

- Four-inch main extension may be used in short cul-de-sacs, shallow side courts, or similar areas where all of the following conditions exist: (1) there is no possibility of further extensions or looping; (2) there are no required hydrants or potential for future hydrants; and (3) the service conditions provided in Section 2.b below can be met. An applicant shall be charged for the size of the main extension to be installed.

- Two-inch pipe may be used in private driveways or roads where all the following conditions exists: (1) there are no more than three possible service connections; (2) there is no possibility of further extension or service connections; (3) there is no requirement for a fire hydrant; and (4) standard service is reasonably available from the extension to all premises to be served.

b. New water mains shall be sized to meet the following water service requirements:

- Projected maximum day demand (MDD) with a residual pressure of at least 40 pounds per square inch (psi) in the main, where feasible;

- Projected MDD plus the project's design fire flow with a residual pressure of at least 20 psi in the main and at existing service connections throughout the pressure zone;

- Projected maximum pumping rate with the pressure not exceeding 140 psi at the nominal lower elevation of the pressure zone (equivalent to 300 feet below reservoir overflow elevation); and

- Pressure fluctuation in the main limited to a maximum of 30 psi under normal operating extremes, not including fire flow.

Exception: Low-pressure service shall be governed by Section 8 and Section 8A of the Regulations Governing Water Service to Customers of EBMUD.

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c. Main extensions, and replacements for service, shall be sized to provide capacity for the applicant and the potential future demand beyond that of the applicant. The applicant shall be charged only for the size of main required for the applicant's project as determined above.

3. Length and Location of Water Mains

a. To the extent practicable, water mains shall be located within the paved area of streets or roads..

b. With the exception of the nonpotable water distribution system and to the extent practicable, the distribution system network shall consist of closed loops so each section of main can be fed from either end, dead ends shall be avoided, existing dead ends shall be eliminated, and areas with a large number of service connections shall have more than one feed. An applicant shall not be charged for the additional water main necessary to close a loop in the existing distribution system unless it is required to meet estimated water service requirements and/or minimize water quality operations. When a closed loop system is required for a new development project, the charge for these water mains shall be included in the applicant's water service estimate.

c. For operational reasons, a water main 20 inches or larger, which has the primary purpose of transmission of water between major facilities and/or significant areas of the distribution system shall not be available for installation of service connections. Service shall be granted from a smaller parallel main extended from the nearest available main in the distribution system or from a turnout on the larger main at a location consistent with the orderly development of the distribution system grid in the vicinity of the applicant's premises. An applicant shall be charged for the parallel main extension required for service. If the existing larger main carries a front foot charge, the District shall reimburse the original applicant based on the front footage of the properties that shall be served by the smaller parallel main, provided that the front foot charge is payable.

Exceptions: Installation of a service connection on a 20-inch or larger water main which has the primary purpose of transmission of water between major facilities and/or significant areas of the distribution system may be considered (1) for an isolated service that can be interrupted for long periods, such as an irrigation service under a conditional service agreement, or (2) for an isolated service where the District determines that the installation of a smaller parallel water main would be impractical because an available main does not exist and the development of a distribution system to serve other properties in the vicinity is not anticipated in the foreseeable future.

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d. A separate parallel water main may be required in a street or road if the following conditions are met for a situation where one or more service laterals or hydrant laterals would be required on the opposite side of the existing water main:

1. The laterals cross three or more traffic lanes in a heavily travelled way.

2. The laterals cross five or more traffic lanes under all other traffic conditions.

3. The road is divided or contain a subsurface structure or facility interfering with the normal installation of a service lateral.

Note: The number of traffic lanes includes bicycle and curb parking.

An applicant shall be charged for a parallel main extension if it is required for service. The existing mains are available for service connections only to premises with frontage on the same side of the street or road.

C. EXCEPTIONS

The preceding provisions shall not apply to main extensions under the following conditions:

1. Where the District finds that there is inadequate capacity in the existing system, in which case the applicant will be advised of the terms and conditions under which an extension may be installed.

2. If the construction of major facilities is required before service can be granted, in which case the conditions of Section 3-B shall govern.

3. If in the determination of the District the majority of adjacent premises fronting on the same street or road are already served by the District at locations other than the principal frontage without service agreements allowing for such non-standard service, a water main extension may not be required. The owner(s) of the premises shall agree in writing to the conditions of service, including relocation of the service and payment of any applicable costs, should standard service become available at the principal frontage. This agreement, which may include provisions of limited or low pressure service if applicable (see Section 8), shall be a covenant against the premises to be served and shall run with the land, and be recorded by the District.

4. Where unusual conditions exist, in which case the applicant will be advised of the terms and conditions under which an extension may be installed.

5. If in the determination of the District it is not in the best interests of the District to extend a water main with standard pressure and flow or to construct major facilities for a new pressure zone, the District may, in its sole discretion, authorize water service from a water

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main that is not adjacent to the principal frontage of the premises to be served. The following conditions must prevail in order for service to be authorized pursuant to this subsection:

- The project is for a small number of premises.
- The premises can be served from a water main in the immediately adjacent lower pressure zone, or higher pressure zone. Service from a higher pressure zone will be considered only if pressures to the premises are not too high.
- The District has determined that a standard distribution system to provide the premises with water service is not presently feasible.
- The proposed method of service has been reviewed and is recommended by the Manager of Water Distribution Planning and approved by the Director of Engineering and Construction.
- The applicant has agreed to all terms and conditions set forth in these Regulations with respect to Limited, Low-Pressure or High Pressure Services, if applicable.
- The applicant has agreed to all terms and conditions necessary to provide water service including, but not limited to, applicant installation and District inspection of pumping and/or storage facilities; restrictions on pumping capacity and operation; agreement to pay a proportionate share of the cost of installing flow control valves or other equipment necessary to provide service without adversely affecting the pressure and flow to existing customers; and acknowledgement that District may install flow restricting devices and/or terminate water service if the restrictions on pumping capacity and operation are exceeded.
- The applicant has agreed to pay a proportionate share of the cost of a main extension and the cost to relocate services in the event that a water main is installed immediately adjacent to the premises at some future date.
- Applicant has also agreed to notify subsequent owners of the premises of the conditional nature of the water service.
- The applicant has further agreed that the location of the water service connection shall be subject to District approval and shall not be located in the traveled way of private roads or driveways and shall be readily accessible for purposes of meter reading and routine maintenance.
- The applicant has provided written evidence of the following:

    a. Satisfaction of all requirements applied to the development by the fire protection agency;

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MAIN EXTENSIONS

b. Evidence that local agencies responsible for issuance of building and occupancy permits have been fully informed of the nature and conditions of water service to the development;

c. Acquisition of all necessary property rights as determined by the District.

For purposes of this subsection, "feasible" shall mean that the District has determined that standard water service configurations under these Regulations are not economical due to the costs of operating and maintaining the water service facilities in relation to the small number of premises to be served. In making this determination, factors to be considered by the District include, but are not limited to: (a) the projected revenue from new services in the development as compared to the costs of operating and maintaining water service facilities that would otherwise be required to serve the development and (b) the anticipated additional costs that would be incurred by the District to maintain water quality in such water service facilities.

6. In certain unusual circumstances as solely determined by the District, a water main extension may not be required and the premises may be served at a location other than the principal frontage, provided that:

- The premises fronts on an existing main of adequate flow and pressure, but is separated from the main by a strip of land used solely for landscaping purposes that is owned by a third party, that has been determined by the District to be unsuitable for development, and across which the applicant has an easement for service and no other utility easement is reasonably available;

- The applicant meets the requirements for a conditional service and agrees in writing to the conditions of such service as set forth in Section 3; and

- The District has determined that a main extension is not desirable because of geotechnical factors or not necessary to facilitate system operation.

D. FRONT FOOT CHARGES AND REFUNDS

1. FRONT FOOT CHARGES

The District will collect a front foot charge, where applicable, before granting a standard service or a private fire service to premises which lie along and may be served directly from any main extension installed under the provisions of this regulation or financed by the District. The front foot charge for a main extension shall be in effect for a period of twenty years from (1) the date of execution of the contract if the extension is financed by an applicant, or (2) the date of the official completion of the extension if financed by the District.

SECTION 4
MAIN EXTENSIONS

The front foot charge shall not be applied more than once to any premises. Except for unusual conditions, premises already served at the date of installation of the extension will be excluded in determining the front foot charge. Unusual conditions include, but are not limited to, premises served under a special service agreement, premises for which relocation of the service connection to the extension is requested, and premises already served but later subdivided requiring additional service connections.

Whether a main extension is installed by an applicant or by the District, the front foot charge will be determined by dividing the charge for the extension by the front footage of all premises which lie along and may be served directly from the extension. When installed by the applicant, the charge for the extension for purposes of determining the front foot charge shall be computed as if installed by the District.

To equitably distribute extension costs to the premises served from the extension, when a premises has an average lot width with more than a nominal difference when compared to the principal frontage, such as on road curves and cul-de-sacs, the average lot width, as determined by the District, shall be the front footage for that premises. The District may also include, in determining the charge, premises which do not have principal frontage on the extension but will have service connections on the extension under special service agreement.

2. FRONT FOOT CHARGE REFUNDS

The applicant who has financed a main extension (or the applicant's assignees) is entitled to the front foot charges collected by the District for permitting the connection of a standard service or a private fire service to such extension. The amounts collected will be refunded without interest within 90 days following the date of collection.

No front foot charge refunds will be made after twenty years from the date of execution of the contract for an applicant-financed extension except those refunds which have accrued during such twenty-year period. The terms of this refund provision shall apply to all water mains installed under contracts executed on or after April 1, 1955.

The total amount of all refunds made by the District to the applicant (or the applicant's assignees) may not exceed the installation charge for the main used to compute the front foot charge.

Section 17

Change in Use and/or Size of Service

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SECTION 17
CHANGE IN USE AND/OR SIZE OF SERVICE

An installation charge and resulting increase of the System Capacity Charge, as provided in the Schedule of Rates and Charges will be required when a customer applies for a change in use, increase in size, or change in location of an existing service connection.

Changes in the use of a service or increased usage on an existing service for a premises and corresponding System Capacity Charge are subject to the following provisions:

A. INCREASE OR CHANGE IN USE:

Before new water using features or equipment (e.g. cooling towers, additions to existing structures, industrial processes, buildings, etc.) are added to a premises or the use of water using features or equipment on a premises increases or changes, the customer must submit a water service application along with supporting water use data for the District to conduct a water service assessment. The District shall review the application to make the following determinations:

1. Whether a new meter is required to accommodate increased water use;
2. The amount of any associated System Capacity Charge resulting from the increase and/or change in use, regardless of the size of the meter.

When the water service assessment indicates a change in use will occur, the District may determine an increase in meter size, lateral(s), or water main(s) is necessary to provide adequate water service to the premises. If the District determines that changes in meter size, lateral(s), or water main(s) are necessary to provide adequate water service to the premises, the customer shall pay any resulting charges as set forth in the Schedule of Rates and Charges. Where an existing meter larger than 1-1/2 inches sufficiently meets the demand of a proposed increase and/or change in use, the District will determine the increase in the estimated annual average water usage for the premises, and will require payment of an additional System Capacity Charge for the increased usage as provided in the Schedule of Rates and Charges. For an increase or change in water use caused by the creation of an Accessory Dwelling Unit or Junior Accessory Dwelling Unit on a premises, connection fees and capacity charges will be imposed only as authorized by Chapter 13 of Division 1 of Title 7 of the California Government Code.

Failure to report an increase and/or change in water use may result in District investigation to determine compliance with these Regulations. If the District determines that changes in the meter size, lateral(s), or water main(s) are necessary to provide adequate water service to the premises and/or that payment of additional System Capacity Charges is required, but the customer refuses to initiate a water service application and/or pay resulting charges set forth in the Schedule of Rates and Charges, the District will take further actions to address noncompliance with these Regulations which may include installation of a flow restriction device and/or discontinuation of service.

SECTION 17

CHANGE IN USE AND/OR SIZE OF SERVICE

B. REQUESTED REDUCTION IN SIZE OF SERVICE

A requested change to a smaller size service must be approved by the District and will be made after the applicant has paid the installation charges as set forth in the Schedule of Rates and Charges. No System Capacity Charges will be assessed for reduction in size of service. The owner shall not be entitled to a refund of any portion of a System Capacity Charge paid for the original larger meter.

C. REQUESTED INCREASE IN SIZE OF SERVICE

A requested increase in the size of a service must be approved by the District and will be made by the District after the applicant has paid the installation charges and the resulting increase in the System Capacity Charge set forth in the Schedule of Rates and Charges. The increase in the System Capacity Charge resulting from an increase in the size of a service equal to the difference between the System Capacity Charges applicable to the new service size as set forth in the Schedule of Rates and Charges.

D. REQUESTED REPLACEMENT OR RELOCATION OF SERVICE LARGER THAN 1-1/2 INCHES

A requested relocation of any meter larger than 1½ inches or replacement of any meter larger than 1-1/2 inches with a meter of equivalent size must be approved by the District and will be made by the District after the applicant has paid the installation charges. If the meter relocation or replacement is in support of improvements to existing structures and/or new construction, the District will determine if the changes will result in an increase in the estimated annual average water usage for the premises, and will require payment of an additional System Capacity Charge for the increased usage as provided in the Schedule of Rates and Charges. The owner shall not be entitled to a refund of any portion of a System Capacity Charge paid for the original meter based on a resultant reduction in the water usage resulting from the changes.

A change in size of service which involves a change in location will only be approved by the District subject to the provisions of Section 18 and payment of the applicable relocation cost.

An installation charge, as provided in the Schedule of Rates and Charges, will be required when a customer applies for a change in type, increase in size, or change in location of an existing service connection.

Section 26

Protection of Public Water Supply

FY 2026

SECTION 26
PROTECTION OF PUBLIC WATER SUPPLY

In making plumbing connections, the customer is required to comply with Public Law 99-339 - The Safe Drinking Water Act Amendments of 1986, and the California State Water Resource Control Board's Cross-Connection Control Policy Handbook (CCCPH). The water purveyor has the primary responsibility for protecting the public water supply from contamination by implementation of a cross-connection control program.

Such regulations prohibit:

- unprotected cross-connections between multiple domestic supplies, a domestic water supply and any auxiliary water supply, or between a potable water supply and a nonpotable water supply;
- water service to a premises where there is a probability that a pollutant, contaminant, or plumbing hazard may be created;
- water service where materials dangerous to health or toxic substances in toxic concentrations are handled; or
- water service where the water system is unstable and cross-connections may be installed or reinstalled.

Accordingly, the District requires the installation of a backflow preventer or other prevention methods under any of the following conditions:

- where another source of water, including recycled water, whether cross-connected or not, is in use or is available for use;
- where contaminated liquid or soluble substances of any kind are used, produced or processed; or
- where cross-connection hazards are identified.

Where a backflow preventer or other prevention method is used as a protection to the customer's plumbing system, a suitable pressure relief valve must be installed and maintained by the customer at the customer's expense. The relief valve shall be installed between the backflow preventer and the water heater.

When necessary, the District may require the customer to eliminate certain plumbing or piping connections as an additional precaution to prevent backflow.

The California State Water Resource Control Board's CCCPH requires the water purveyor to any premises on or for which a backflow preventer is installed to ensure that adequate maintenance and periodic testing are provided by the water customer to guarantee proper operation. According to the CCCPH, backflow preventers and airgaps must be inspected and tested at least once per year or more frequently if determined to be necessary by the water purveyor. Backflow preventers must be tested by persons who have demonstrated competency to the water purveyor or health agency. Accordingly, the

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PROTECTION OF PUBLIC WATER SUPPLY

District will establish a list of contractors who have demonstrated competency in the testing of backflow preventers, and a list of approved preventers that have passed laboratory and field evaluation tests performed by a testing organization that is recognized by the State Water Resource Control Board.

Backflow preventers and airgaps may be inspected and tested by the District. If the inspection cannot be made without undue difficulty because of an obstruction or other interference, the customer will be notified and required to either correct the condition or have the inspection made at the customer's own expense and witnessed by the District.

Installation costs and the annual testing and maintenance of backflow preventers shall be performed by a certified tester contracted by the customer at the customer's expense. Passing test reports must be received by EBMUD's Backflow Prevention Group annually for continued water service.

After July 1, 2025, District-owned backflow preventers on residential services shall no longer be installed, tested, or repaired at the District's expense. Any backflow preventers required to be installed, tested, or maintained must be performed by the customer at the customer's expense.

Service for any premises may be discontinued if it is found that dangerous or unprotected cross-connections exist or if the regulatory requirements are not met. Service will not be restored until such defects are corrected at the customer's expense and applicable District restoration charges have been paid.

Section 30

Recycled Water Service

FY 2026

SECTION 30
RECYCLED WATER SERVICE

A. SCOPE OF REGULATION

The State Legislature has determined that use of potable water for certain nonpotable uses is a waste or unreasonable use of water if recycled water is available which meets the conditions specified in California Water Code section 13550, et seq. District Policy 9.05 requires that customers of the District use recycled water for nonpotable uses when it is of adequate quality and quantity, available at reasonable cost, not detrimental to public health, and not injurious to plant life, fish, and wildlife. This Regulation governs the following: the purposes for which the District may require the use of recycled water; the manner in which the District determines whether to require recycled water use in a given case; and the rights and obligations of an applicant for water service or an existing District customer affected by the District's determination.

This Regulation does not govern the provision or use of untreated nonpotable water (also known as raw water). The District may agree to provide raw water, where available, for nonpotable use on a case-by-case basis pursuant to contractual terms and conditions.

B. DEFINITIONS

The following terms, when used in this Regulation, shall have the meanings given below.

Applicant. A person or entity who has applied to the District for new potable water service or recycled water service, or for a change in use of existing potable water service or recycled water service, at a given premises.

Customer. A person or entity who has established and receives potable water service or recycled water service from the District at a given premises.

Dual Plumbing. The installation of separate facilities for the distribution of potable and recycled water service. These facilities may include distribution piping from the water service main or water supply source to the water service meter, and facilities on the customer's side of the water service meter.

Nonpotable Use. Any use of water for which recycled water may be lawfully used, including irrigation of landscape areas (including parks, greenbelts, playgrounds, school yards, athletic fields, golf courses, cemeteries, residential landscaping, common areas, commercial or industrial landscaping, and freeway, highway, and street landscaping, but excluding designated outdoor eating areas subject to spray, mist or runoff); irrigation of crops and pasture land; industrial uses (including floor trap priming, cooling towers, and air-conditioning devices), toilet and urinal flushing in any structure described in California Water Code section 13553, subdivisions (c) and (d); construction; fire suppression; hydrostatic testing; dust control; street sweeping; and supply for recreational impoundment.

Recycled Water. Water which, as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur and is therefore considered a valuable resource. (Wat. Code, § 13050, subd. (n).)

Retrofit. The conversion or modification of existing water service facilities such that the facilities are suitable for recycled water service.

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Water Reuse Zone. A portion of the District's service area in which the District has determined that recycled water service is reasonably available. In general, a premises is within a Water Reuse Zone if it is no more than one-half mile from an existing or planned recycled water pipeline. The District's designated Water Reuse Zones are described on the District's public website. The District may designate new Water Reuse Zones or modify existing Water Reuse Zones from time to time, which shall become effective when made available on the District's website.

Water User. An applicant or a customer.

C. RECYCLED WATER USE REQUIREMENT

Each existing customer of the District, and each applicant for new or expanded service from the District, shall use recycled water for nonpotable uses within any designated Water Reuse Zone, if the District determines pursuant to this Regulation that recycled water is or will be available for the intended nonpotable uses and requires its use.

D. DETERMINATION OF AVAILABILITY OF RECYCLED WATER

The District may from time to time identify existing customers within a Water Reuse Zone and determine whether recycled water is available to serve the nonpotable uses of those customers. The District will also review applications for new or expanded service within a Water Reuse Zone to determine whether recycled water is available to serve an applicant's intended nonpotable uses. The District, in its sole discretion, will determine whether a source of recycled water is available to a particular water user for a particular nonpotable use.

When making that determination, the District will consider the following facts and circumstances:

1. Whether the identified source of recycled water is of adequate quantity for the water user's intended nonpotable use;

2. Whether the identified source of recycled water is of adequate quality for the water user's intended nonpotable use. In determining adequate quality, the District shall consider all relevant factors on a user-by-user basis, including applicable legal and regulatory requirements, food and employee safety, and level and types of specific constituents in the recycled water affecting the intended nonpotable use;

3. Whether it is technically feasible for the District to treat and deliver recycled water for the intended nonpotable use;

4. Whether recycled water may be furnished for nonpotable use at a reasonable cost to the water user and to the District. Before requiring recycled water use, the District shall determine that the cost to the water user of supplying treated recycled water for a particular nonpotable use of water is comparable to, or less than, the cost of supplying potable domestic water to the same water user for the same use. In making this determination, the District shall compare the present and projected costs to supply each source of water (potable vs. recycled) to the water user for specific nonpotable use(s), accounting for the following: (i) the expected cost to the water user

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for system capacity and for the acquisition, conveyance, treatment, and distribution of each source of water, (ii) the expected cost to the water user to construct any new improvements and infrastructure necessary to supply each source of water to the water user, which costs may be evaluated over a reasonable payback period, (iii) any cost savings to the water user expected to result from a difference in the unit rate charged for each water source, and (iv) any cost savings to a customer expected to result from an offer of payment by the District towards the cost of necessary retrofit work;

5. Whether the intended use of recycled water will be detrimental to public health;

6. Whether the intended use of recycled water will degrade water quality or be injurious to plant life, fish, and wildlife;

7. Whether there is an alternative higher or better use for the identified source of recycled water; and

8. Whether the use of recycled water for the water user's intended use would be consistent with all applicable federal, state, and local laws and regulations.

The District shall consider the facts and circumstances listed above. The District may consider any relevant information and any other relevant facts and circumstances. The District may require a water user to furnish information which the District determines to be relevant to the determination. However, nothing in this Regulation shall be construed to require the District to hold a hearing or take any evidence.

When determining whether recycled water is available for purposes of this Regulation, the District may consider both existing facilities and identifiable planned facilities. If the District determines that recycled water will be available in the future from planned recycled facilities not yet constructed or in operation and requires recycled water use on that basis, then the District will offer interim potable water service as provided in this Regulation until the District is able to deliver recycled water to the premises.

If the District determines in its sole discretion that recycled water is available to a water user for a particular nonpotable use, the District may require the water user to use recycled water in lieu of potable water for that use, and if the District so requires, then the District will not supply the water user with potable water for that nonpotable use, except (1) as a backup supply if authorized on conditions set by the District, and/or (2) on an interim basis as provided in this Regulation. The District will notify the water user in writing of the requirement to use recycled water. The notification will include information regarding District water service requirements, state a date by which the water user's premises must be ready to accept recycled water service, and describe any facilities that must be constructed on the water user's premises, including dual plumbing and backflow prevention devices, and the deadline for completing construction. The District may require a water user to retrofit existing water service facilities to accommodate recycled water service. Applicants may be required to pay for recycled water main extensions providing principal frontage and onsite piping, recycled water infrastructure, and dual plumbing, on terms and conditions specified by the District.

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E. RECYCLED WATER USE PERMITS

Water users who are required or desire to use recycled water shall submit a recycled water service application in a form specified by the District. Following receipt, review, and approval of the application, and the completion of construction, but before the start of recycled water service, the District will issue a recycled water use permit which states the approved use(s) for recycled water at the water user's premises and the other requirements the water user must meet as a condition of recycled water service.

Recycled water service will not commence until all fees and charges have been paid and the District has verified compliance with the permit requirements. Failure to comply with permit requirements is a violation of this Regulation and may result in suspension or termination of recycled water service.

F. INTERIM POTABLE WATER SERVICE

As solely determined by the District, a potable water supply for nonpotable use may be provided on an interim basis until all necessary construction and other requirements for receiving recycled water delivery is complete and a recycled water supply is ready to be served. The District may offer interim potable water service if the District is not yet ready to deliver recycled water to or near a customer's premises but has planned for a future capability to make such delivery. The District generally will not provide interim potable water service for nonpotable use if recycled water service is currently available for delivery to the customer's premises. All potable water delivered during the period of interim potable water service will be billed at the prevailing potable water rates.

The District may condition the provision of interim potable water service on the water user's agreement to comply with any or all of the following requirements:

1. Installation by the water user within a time specified by the District of water service facilities, separate from the potable water service facilities, necessary to convert to or begin receiving a recycled water supply when available;

2. Agreement by the water user to pay the District's cost to install water facilities which the water user is required or has agreed to install within a specified time, if the work is not completed within that time; and/or

3. Any other conditions deemed necessary by the District.

Applicants for new or expanded service who are approved to receive an interim potable water supply pending the commencement of delivery of recycled water to the premises shall pay the applicable System Capacity Charge for Nonpotable Water Service before interim service will be provided, notwithstanding the interim delivery of a potable water supply.

Interim potable water service to a customer shall be discontinued if and when the District makes any of the following determinations:

1. That the District is ready to deliver an adequate supply of recycled water to the customer's

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premises, in which case the customer henceforth must use recycled water, not potable water, for nonpotable use;

2. That the customer has not timely completed any required construction work or failed to comply with any other condition on the customer's receipt of interim potable service, in which case the customer must cease using potable water for nonpotable use; or

3. That the District no longer plans to develop the capability to deliver recycled water to or near the customer's premises, in which case the customer may continue using potable water for nonpotable use if the applicable System Capacity Charge for Potable Water Service is paid, provided that any prior payment received for the System Capacity Charge for Nonpotable Water Service will be credited towards the balance due.

G. EXISTING CUSTOMER RETROFIT WORK

1. APPLICABILITY

The District may require an existing customer who has previously established one or more nonpotable use(s) at a given premises within a Water Reuse Zone to cease using potable water for such nonpotable use(s) and to use recycled water henceforth instead, if the District determines in accordance with this Regulation that recycled water is or will be available to serve the nonpotable use(s) at the customer's premises, and the provisions of this Subsection G (entitled "Existing Customer Retrofit Work") apply to each such customer.

2. INSTALLATION, OPERATION, AND MAINTENANCE COSTS

a. Financial Responsibility for Design and Construction Work. Except as otherwise provided herein, when an existing customer is required by the District to convert to recycled water service, the District will offer to (1) pay or reimburse the reasonable design and capital costs of any retrofitting of the water service facilities on the customer's side of the water service meter that is necessary for the customer to use recycled water in compliance with the customer's recycled water use permit and this Regulation, and (2) provide for installation of the recycled water service facilities necessary to deliver recycled water to the customer's water service meter which is payable or reimbursable by the District as specified in this Regulation. The District may require the customer to remove or downsize the existing potable water connection. Notwithstanding the foregoing, if the customer requests installation of recycled water service facilities to serve new development or to increase the capacity of a previously established nonpotable use, such facilities are subject to the provisions of Subsection H (entitled "New Customer Service Applications and Voluntary Conversions") and not this Subsection G.

b. Financial Responsibility for Operation and Maintenance Costs. A customer may begin to receive service when the retrofit is completed, the customer's premises is ready to accept recycled water, and the customer has applied for and received a recycled water use permit. The customer is responsible for all costs of operating and maintaining the water service facilities on the customer's side of the water service meter(s) and for complying

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with all reporting and inspection requirements in accordance with District and State regulations, except where the District has determined that it would be in the best interests of the District to own, operate and maintain on-site treatment facilities on the customer's premises in which case the District may agree to accept responsibility for such costs. The customer shall pay the District's current nonpotable water rate for recycled water delivered to the customer. If recycled water is unavailable when the retrofit is complete, the customer shall be liable to pay the District's current potable water rates until recycled water is available for delivery to the customer's premises.

c. Capacity Charges and Installation Charges. An existing customer who converts a previously established use of water at a given premises from potable water use to recycled water use, without increasing the meter size of the connection serving that previously established use, shall not be liable to pay the System Capacity Charge for Nonpotable Water Service. Fees and charges, including a capacity charge, previously paid to receive potable water service, shall not be refunded.

3. DESIGN AND CONSTRUCTION PROCESS

a. Option to Construct. An existing customer required to convert to recycled water service may choose to authorize the District to design and construct the required retrofit work, or otherwise the customer must design and construct the required retrofit work by the date indicated in the District notification. If the District determines before construction begins that the retrofit of the customer's facilities is not feasible, the District shall be released from any obligation to perform or reimburse the cost of any retrofit work and the customer shall be released from the requirement to convert to recycled water service until such time as the District determines the retrofit is feasible.

b. Retrofit Work By District. If a customer requests the District to design and construct the retrofit work, the customer shall sign a Retrofit Agreement which sets forth the rights and obligations of the District and the customer with respect to the retrofit work. The customer must comply with the Retrofit Agreement as a condition of the District's performance of the work. The customer may review the retrofit design. The customer must provide access to the premises as necessary for the District or its contractors to perform the design and construction work. Site access may be required for inspections, testing, or other purposes. The Retrofit Agreement may require the customer to indemnify the District, to allow entry and inspection by the District, and to consent to other provisions deemed appropriate by the District for the accomplishment of the work and the protection of the District and its customers. The District shall install backflow prevention devices when required by law and/or deemed appropriate by the District.

c. Retrofit Work By Customer.

i. Design. If a customer does not enter into a Retrofit Agreement acceptable to the District, the customer must perform the design and construction of the retrofit work in accordance with the following requirements. The customer shall first submit to the

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District for review a cost estimate for a complete design for the retrofit construction work. If the District approves the cost estimate, the customer shall prepare, or have prepared, a conceptual ("30%") design and submit it for District review. If the District approves the conceptual design, the customer shall complete the final design and submit it for District review. The customer's retrofit design must include all retrofit elements required by state law. The District shall review the completed design for adherence to legal and District requirements and may approve, conditionally approve, or deny approval of the submitted design. The District may direct changes to the design, in which case the customer must submit a revised design incorporating the changes to the District for approval before construction begins. If the final design is approved, the District will thereafter pay the customer's reasonable and documented actual design costs, provided that payment shall not exceed the approved design cost estimate absent prior written approval by District. Any changes to the proposed retrofit work must be submitted for District approval prior to construction.

ii. Construction. After final design approval, the customer shall provide a construction cost estimate and schedule for District review. Construction work may not begin until the District has approved the construction cost estimate and schedule. The customer shall thereafter complete the retrofit work. The customer shall be exclusively responsible for compliance with all applicable federal, state, and local codes, laws, ordinances and regulations and for obtaining and complying with all necessary permits. The customer shall maintain compliance documents and furnish copies of said documents upon District request. Customers shall install backflow prevention devices as required by law or by the District. The District shall be entitled to review the scope of work and schedule set forth in a construction contract to verify the suitability and timeliness of the proposed retrofit work. However, the District shall not be party to any contract between the customer and a third-party consultant or contractor, and the District shall have no responsibility thereunder.

iii. Inspection. After construction is complete, the customer shall notify the District, and the District may thereafter enter the premises and inspect the retrofit work to verify that the retrofit items are installed and properly functioning, and to perform required cross-connection and backflow prevention testing. The District may require the customer (or the customer's representative) and any construction contractor used to perform the retrofit work to be present during the final inspection. The District may pass, conditionally pass, or fail the work. If the construction work passes the inspection, the District will thereafter pay the customer's documented actual construction costs, provided that payment shall not exceed the approved construction cost estimate absent prior written approval by District.

iv. Customer's Failure to Complete Retrofit Work. A customer required to perform retrofit work must complete the required work and be ready to receive delivery of recycled water no later than the date specified by the District. The District may extend the time to complete retrofit work in the reasonable exercise of its discretion if the customer shows good cause. Failure to timely complete retrofit work is a violation of this

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Regulation.

v. Indemnification and Liability. A customer, by accepting payment or reimbursement from the District for recycled water retrofit work which is completed by the customer or by a contractor or agent retained by the customer, is required to indemnify, defend, and hold harmless the District and its Directors, officers, and employees, from and against any and all loss, liability, expense, claims, lawsuits, and damages, including reasonable attorney's fees, arising out of or pertaining or relating to the design, construction, and/or operation of the recycled water retrofit work. Furthermore, by providing any review, inspection, or approval of customer work or customer submittals, the District does not intend to warrant or represent that the work or submittals are adequate or sufficient to meet legal or permit requirements or to function for the customer's intended purpose, and the District shall not be liable to the customer or any other party for any claims or losses arising in connection therewith.

H. NEW CUSTOMER SERVICE APPLICATIONS AND VOLUNTARY CONVERSIONS

1. APPLICABILITY

The provisions of this Subsection H (entitled "New Customer Service Applications and Voluntary Conversions") apply to the following applicants and customers:

a. Each applicant for water service for a new or expanded nonpotable use who is required by the District to use recycled water pursuant to this Regulation.

b. Each existing customer of the District who requests installation of additional recycled water service facilities to serve new development or to expand capacity.

c. Each existing customer of the District who requests conversion from potable to recycled water service, where the conversion is not required by the District.

2. COSTS FOR WHICH APPLICANTS AND CUSTOMERS ARE RESPONSIBLE

Water users subject to this Subsection H shall be solely responsible for the full cost of all facilities and infrastructure necessary to deliver recycled water from the closest available recycled water facility to and within the premises. Water users are solely responsible to timely pay all applicable rates, charges, and fees in accordance with the District's Water System Schedules of Rates, Charges, and Fees and the Regulations Governing Water Service to Customers of the East Bay Municipal District. Failure to timely complete all work or to pay any sum due is a violation of this Regulation and will result in denial of water service.

3. MAIN EXTENSIONS; CONDITIONAL SERVICE CONNECTIONS

The District may require the installation of major recycled water main extensions with excess capacity to meet future customer demands in certain service areas. The District will evaluate the need and feasibility for main extension excess capacity on a case by case basis. The water

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user will only be charged for the size of the main required by District standards to serve the water user's recycled water demand. Extension of recycled water mains shall be subject to the requirements of Section 4 of the District's Regulations Governing Water Service to Customers of the East Bay Municipal District.

Section 3 of the Regulations Governing Water Service to Customers of the East Bay Municipal District specifies the conditions in which the District may locate a conditional service connection(s) at other than the principal frontage. The District may locate a conditional recycled water service connection(s) at other than the principal frontage if the conditions specified in Section 3 exist.

4. SYSTEM CAPACITY CHARGE

An applicant for new or expanded service who is required by the District to use recycled water for nonpotable use(s) shall pay the applicable System Capacity Charge for Nonpotable Water Service before service is provided in accordance with applicable provisions of the Regulations Governing Water Service to Customers of the East Bay Municipal District and the Water System Schedules of Rates, Charges, and Fees.

5. OPERATION AND MAINTENANCE COSTS; RATES

The customer is responsible for all costs of operating and maintaining the water service facilities for potable and recycled water on the customer's side of the water service meter(s) and for complying with all reporting and inspection requirements in accordance with District and State regulations, except where the District has determined that it would be in the best interests of the District to own, operate and maintain on-site treatment facilities on the customer's premises in which case the District may agree to accept responsibility for such costs. The customer shall pay the District's current nonpotable water rate for recycled water delivered to the customer. If recycled water is unavailable when construction is complete, the customer shall be liable to pay the District's current potable water rates until recycled water is available for delivery to the customer's premises.

I. ENFORCEMENT AND APPEALS

1. ENFORCEMENT & REMEDIES

The District may deny or hold in abeyance an application for new or expanded service if the applicant does not comply with this Regulation. The District may take enforcement action against an applicant or a District customer who does not comply with this Regulation, including any or all of the following actions:

a. Denial or discontinuation of potable water service for nonpotable use.

b. Installation of a flow restricting device on a customer's potable water connection, after a written warning to the customer and authorization by the General Manager or the Manager of the Customer and Community Services Department, to prevent the use of

SECTION 30
RECYCLED WATER SERVICE

potable water for nonpotable uses for which the District has determined that recycled water is available.

c. Pursuit of an order from the State Water Resources Control Board requiring the water user to use recycled water.

d. Initiation of legal action to enforce this Regulation and require completion of required work.

e. Pursuit of any other legal or equitable remedy available to the District.

2. COSTS AND ATTORNEYS' FEES

The District may recover from any person or entity in violation of this Regulation the costs it incurs in connection with enforcing this Regulation, including staff time, and may seek attorneys' fees in any court action or proceeding.

3. APPEALS

A water user aggrieved by a final decision made by the District in connection with this Regulation may seek relief by submitting a written appeal to the Manager of Water Supply Improvements within 30 days of the date of the decision. The appeal must describe (1) the decision at issue, (2) the specific relief requested, (3) a statement of facts which the appellant believes entitles the appellant to the requested relief, and (4) copies of all relevant supporting documentation or written evidence the appellant wishes the District to consider. The Manager of Water Supply Improvements or designee will consider the submitted material and any other relevant evidence and decide whether to (1) grant relief in whole or part or (2) affirm the original decision. The water user shall not be entitled to a hearing, except where a hearing is required by law. The decision of the Manager of Water Supply Improvements is final. This written appeal process is the exclusive means to seek further administrative review of a decision made in connection with this Regulation and failure to timely pursue this process shall be deemed a failure to exhaust administrative remedies.

Section 31

Water Efficiency Requirements

FY 2026

SECTION 31
WATER EFFICIENCY REQUIREMENTS

These regulations identify the types of water efficiency requirements for water service and the procedure for notification to Applicants that water efficiency measures are required. Applicants shall be subject to the most current and most water-efficient requirements in effect on the date the District receives payment for new or upgraded service, whether specified by EBMUD or other local, state, or federal regulations.

A. DETERMINATION OF FEASIBILITY OF WATER EFFICIENCY MEASURES

The District will review applications for new standard services and determine the applicability of, and compliance with, water-efficiency requirements. Applicants for increased or expanded service shall be required to meet the water-efficiency requirements for all new water service facilities and may be required to retrofit existing water service facilities or uses to comply with all requirements. Applicant shall maintain design documents and construction and installation records and furnish a copy of said documents and records to the District upon request. The District may inspect the installation of indoor and outdoor water efficiency measures to verify that the items are installed and performing to the required water efficiency levels. The Applicant or their representative may be present during any District inspection.

B. WATER EFFICIENCY REQUIREMENTS FOR NEW DEVELOPMENT OR EXPANDED SERVICE

Water service shall not be furnished to any Applicant for new or increased or expanded service, or for any change in customer classification (such as a change from industrial to commercial, residential to commercial, or the like) that includes new or retrofitted water using equipment, unless all the applicable water-efficiency measures hereinafter described in this Section 31 and required by applicable local, state and/or federal law have been reviewed and approved by the District. All the applicable and required water-efficiency measures shall be installed at Applicant's expense.

All applicants applying for new water service for multi-family residential structures or mixed-use residential and commercial structures shall comply with all applicable local and/or state submetering regulations. Submeters shall be equipped with registers with an encoded output to allow for electronic reading of submeters and shall be accessible for maintenance and visual needs. Applicants shall submit site and plumbing plans including location, accessibility, and specifications for submeters. See Sections 2 and 3 of EBMUD Regulations for additional requirements.

C. INDOOR WATER USE

a. All Applicants shall comply with these regulations and those required by applicable local, state and/or federal law including the California Green Building Standards Code (CAL Green).

b. Toilets shall be high-efficiency or dual flush models rated and third party tested at a maximum flush volume of 1.28 gallons per flush (gpf), and be certified as passing a 350 gram or higher flush test as established by the U.S. Environmental Protection Agency

SECTION 31
WATER EFFICIENCY REQUIREMENTS

WaterSense Specification or other District-accepted third-party testing entity. Pressure-assisted type toilets shall be high-efficiency rated at a maximum 1.0 gpf. No flush or conversion devices of any other kind shall be accepted.

c. Wall mounted urinals shall have a maximum rated flow of 0.125 gpf or less, or be zero water consumption urinals.

d. Floor mounted urinals shall have a maximum rated flow of 0.5 gpf or less.

e. Single showerheads shall have a maximum flow rate of 1.8 gallons per minute (gpm) at 80 pounds of pressure per square inch (psi).

f. Multiple showerheads serving a single shower enclosure shall have a combined flow rate of not more than 1.8 gpm at 80 psi or shall be designed to allow only a single showerhead to be operated at one time.

g. Residential lavatory faucets shall have aerators or laminar flow control devices (i.e., orifices) with a maximum rated flow of 1.2 gallons per minute or less.

h. Public lavatory faucets shall have aerators or laminar flow control devices with a maximum rated flow of 0.5 gallons per minute or less.

i. Wash fountains shall have a maximum flow rate of not more than 1.8 gpm per wash station.

j. Metering faucets shall not deliver more than 0.20 gallons per cycle.

k. Kitchen faucets shall have aerators or laminar flow control devices (i.e., orifices) with a maximum rated flow of 1.8 gallons per minute or less with optional temporary flow of 2.2 gpm.

l. Clothes washing machines shall be front loading horizontal axis or top loading models with a water factor rating of 4.5 or less. A water factor rating of 4.5 means a maximum average water use of 4.5 gallons per cubic foot of laundry.

m. Residential dishwashers rated as standard size (i.e. 307 kWh/year) shall use less than or equal to 5.0 gallons/cycle. Dishwashers rated as compact size (i.e., 222 kWh/year) shall use less than or equal to 3.5 gallons/cycle.

n. Cooling towers not utilizing recycled water shall be equipped with recirculating systems and operate at a minimum of five (5) cycles of concentration. Newly constructed cooling towers shall be operated with conductivity controllers, as well as make up and blowdown meters.

o. Food steamers in all food service facilities shall be boiler-less or self-contained models using ≤ 3.0 gallons per hour where applicable.

SECTION 31
WATER EFFICIENCY REQUIREMENTS

p. Ice machines shall be air-cooled and use no more than 20 gallons of water per 100 pounds of ice and shall be equipped with a recirculating cooling unit or water-cooled on a closed loop system.

q. Commercial refrigeration shall be air-cooled or if water-cooled, must have a closed looped system. No once through, single pass systems are permitted.

r. Pre-Rinse dishwashing spray valves shall have a maximum rated flow of 1.28 gpm or less.

s. Food disposers shall modulate the use of water to no more than 1 gpm when the disposer is not in use and shall automatically shut off after no more than 10 minutes of inactivity. Disposers shall use no more than 8 gpm of water.

t. Commercial dishwashers or ware washing equipment shall be currently labeled an EnergyStar rated water efficient model meeting the maximum water consumption limits as specified in the table below:

Machine Type	High Temp Requirements	Low Temp Requirements
Under Counter	≤ 0.86 GPR	≤ 1.19 GPR
Stationary Single Tank Door	≤ 0.89 GPR	≤ 1.18 GPR
Pot, Pan, and Utensil	≤ 0.58 GPSF	≤ 0.58 GPSF
Single Tank Conveyor	≤ 0.70 GPR	≤ 0.79 GPR
Multiple Tank Conveyor	≤ 0.54 GPR	≤ 0.54 GPR
Single Tank Flight Type	≤ GPH ≤ 2.975x + 55.00	≤ GPH ≤ 2.975x + 55.00
Multiple Tank Flight Type	≤ GPH ≤ 4.96x + 17.00	≤ GPH ≤ 4.96x + 17.00

*GPR (gallons per rack); GPSF (gallons per square foot); GPH (gallons per hour)

u. Conveyor and in-bay vehicle wash facilities shall reuse a minimum of 60% of water from previous vehicle rinses in subsequent washes.

v. Self-service vehicle wash facilities shall use spray nozzles with a flow rate of 3.0 gpm or less.

w. Swimming pools and spas shall be covered when not in use, unless public health and safety concerns exist.

D. OUTDOOR WATER USE

a. All Applicants shall comply with all District water service regulations and those required by applicable local, state and/or federal law including the Model Water Efficient Landscape Ordinance (MWELO).

SECTION 31
WATER EFFICIENCY REQUIREMENTS

b. Applicants shall submit, at a minimum, a scaled site plan that identifies the property address, parcel boundaries, building footprints, hardscape, softscape, meter location, and location of each hose bib. If an application for service is submitted without a detailed landscape plan for the entire premises, the District will estimate the new irrigable landscape area to determine the potential irrigation demand (default demand) for inclusion in the total domestic water demand calculation. Projects subject to MWELO shall also provide a compliant landscape documentation package as required by the ordinance.

c. All premises with 500 square feet or more of new irrigable landscape area shall install a modular weather-based smart controller with rain or soil moisture sensor, an irrigation connection with a manual shutoff valve, a backflow prevention device, a pressure regulator where pressure exceeds the operating range of system components, and sleeves allowing irrigation to extend to all landscape areas.

d. All non-residential premises with 500 square feet or more of new irrigable landscape shall also install a flow sensor with master shutoff valve.

e. All residential premises with more than 5,000 square feet of new irrigable landscape area shall also install a flow sensor with master shutoff valve.

f. As provided in Sections 1 and 3 of the Regulations, unless determined by the District that a District-dedicated irrigation meter is required, a private dedicated irrigation meter shall be required for residential premises with an irrigable landscape area of 5,000 square feet or more.

g. As provided in Sections 1 and 3 of the Regulations, unless determined by the District that a District-dedicated irrigation meter is required, a private dedicated irrigation meter shall be required for non-residential premises with an irrigable landscape area of more than 1,000 square feet but less than 5,000 square feet.

h. As provided in Sections 1 and 3 of the Regulations, a District dedicated irrigation meter shall be required for non-residential premises with an irrigable landscape area of 5,000 square feet or more.

E. NONCOMPLIANCE

The District will review applications for new and expanded services for water efficiency features as described in this Section. If an application does not meet the water efficiency requirements, the District may require the Applicant to resubmit a revised water service application and water efficiency plan at the Applicant's expense. The District may withhold water meter(s) and account activation until the District determines the application complies with the requirements of this Section.

EXHIBIT B

Wastewater Department

Schedule C

Industrial Permit Fees

FY 2026

SCHEDULE C – WASTEWATER DEPARTMENT
INDUSTRIAL PERMIT FEES

EFFECTIVE 07/01/2025

The District shall charge the following annual fees for each permit type when a permit is issued or renewed.

PERMIT TYPE	ANNUAL FEE
Wastewater Discharge Permit	$3,540
Estimation Permit	$1,380
Limited Term Discharge Permit	$3,250

Wastewater Discharge Permit – A written document that contains general and specific requirements governing onsite management, pretreatment, and discharge of wastewater to the community sewer. A Wastewater Discharge Permit is issued to a significant industrial user; which means an industrial user that warrants a control mechanism as determined by the District, or to a discharger that the District determines requires a permit to establish disposal charges based on flow and strength. The Wastewater Discharge Permit fee applies to Groundwater Permits.

Estimation Permit – A permit issued to a discharger that demonstrates at least 20 percent of its metered water consumption is not discharged to the community sewer. The volume diverted will not be subject to the wastewater disposal charges.

Limited Term Discharge Permit – Permits for temporary discharges of unmetered water during a specified term.

Groundwater Permit – A permit issued for discharge of groundwater on an ongoing basis.

Wastewater Department

Schedule D

Other Fees

FY 2026

SCHEDULE D – WASTEWATER DEPARTMENT
OTHER FEES

EFFECTIVE 07/01/2025

TYPE	RATE
Inspection and Monitoring Fees	$1,980
Violation Follow-Up Fees	
Stage 1	$870
Stage 2	$1,990 + Testing Fees[1]
Stage 3	$3,920+ Testing Fees[1]
Private Sewer Lateral Compliance Fees	
Compliance Certificate[2]	$390
Time Extension Certificate	$130
Inspection Reschedule	$120
Extra Lateral or Additional Verification Test	$130 per lateral
Off-Hours Verification[3]	$280 for 1.5 hours onsite
Specific Appointment Time[4]	$350 for 1.5 hours onsite
HOA/Greater than 1,000 Oversight Fee	$540
PSL Violation Follow-Up – Initial Fee	$560
PSL Violation Follow-Up – Continuing Noncompliance Fee	$140
Compliance Agreement	$340

[1] Violation follow-up fees do not include required testing. Testing fees will be charged in accordance with Schedule E Wastewater Department Testing Fees.
[2] Compliance Certificate Fee may be charged for performance of a Verification Test that results in issuance of a new Compliance Certificate, annotation of an existing Compliance Certificate, or issuance of one or more new Compliance Certificates due to a parcel split or merger
[3] The fee for off-hours verification is charged once scheduled and will not be refunded if cancelled or rescheduled.
[4] Two Inspection Reschedule fees will be charged for Specific Appointment time cancellations.

Wastewater Department

Schedule E

Testing Fees

FY 2026

SCHEDULE E – WASTEWATER DEPARTMENT TESTING FEES

EFFECTIVE 07/01/2025

LABORATORY TEST	FEE	METHOD*
Acrolein & Acrylonitrile	$176	EPA 624.1
Chemical Oxygen Demand	$70	SM 5220 D
Cyanide	$147	SM 4500 CN
Metals (Arsenic, Cadmium, Chromium, Copper, Iron, Lead, Nickel, Silver, and Zinc)	$261	EPA 200.7
Metals (Mercury)	$164	EPA 245.1
Oil & Grease: SGT-HEM	$230	EPA 1664B
Organochlorine PCB & Pesticides	$62	EPA 608
pH Field Analysis	$32	
Phenols: Total	$161	EPA 420.4
PCB Congeners	$895	EPA 1668C
Semi-volatile Organics	$584	EPA 625.1
Total Suspended Solids	$47	SM 2540 D
Volatile Organics	$255	EPA 624.1

* Or equivalent certified method

Wastewater Department

Schedule F

Resource Recovery
Fees and Prices

FY 2026

Payment collection for all Resource Recovery accounts shall follow the payment collection provisions contained in Section 13, Payment of Bills in the Regulations Governing Water Service to the Customers of EBMUD and Items C and K, Returned Payment Charge and Late Payment Penalty and Interest, of Schedule C of the Water System Rates and Charges.

ADMINISTRATIVE FEES	PRICE
Account Fee	$400 (per year)
Expedited Permit Fee	$2,500 (per request)
Categorical Waste Permit Fee	Variable (max $5,000 per year)[1]
Unusual Waste Evaluation Fee	Variable[2]

[1] This fee is charged annually for categorical wastes that require additional monitoring, record-keeping, sampling, regulatory reporting, inspections, and/or technical analyses for compliance with Part 403 of the Code of Federal Regulations. When a categorical waste is submitted for review, the District will determine the annual fee based on the District's reasonable estimated cost for the work including all analyses, engineering, materials, equipment, consumables, labor, and related expenses incidental to the permit administration. The District will notify the customer of the fee prior to permit issuance or renewal.

[2] For unusual waste reviews that require additional level of analysis and evaluation, the District will determine the reasonable estimated fee for the work including all analyses, engineering, materials, equipment, consumables, labor, and related expenses incidental to the waste evaluation. The District will notify the customer of the fee prior to initiating the waste evaluation.

MATERIAL TYPE	PRICE[3]
Septage	Up to $0.12/gal
Fats, Oil and Grease[4]	Up to $0.16/gal
Process Water	Up to $0.10/gal
Brine	Variable with Total Dissolved Solid (TDS) Up to $0.10/gal ≤ 50,000 mg/l TDS Up to $0.11/gal 50,001 – 100,000 mg/l TDS Up to $0.13/gal > 100,000 mg/l TDS
Sludge	Variable with % Total Solids (TS) Up to $0.11/gal up to 3% TS Plus Up to $0.01/gal per %TS for TS between 3% to 20%
Clean Liquid Food Waste Slurry[5]	Variable with % Total Solids (TS) Up to $0.07/gal up to 3% TS Plus Up to $0.005/gal per % TS for TS between 3% to 20%
Liquid Organic Material[4]	Up to $0.11/gal
Protein Material[4]	Up to $0.17/gal
Solid Organic Material	$30/ton – $120/ton[6]

[3] Current prices shall be available at https://www.ebmud.com/wastewater/commercial-waste/trucked-waste. Prices may vary consistent with the cost to treat up the listed amount. Additional charges may apply for special accommodations, such as off-hours deliveries that require additional staff support, special equipment requirements to receive or process material, special treatment requirements, or additional regulatory compliance costs. These charges shall be calculated based on estimated costs of District, labor, material, equipment, consumables, and outside agency fees. The District will notify the customer and provide an estimate prior to providing special accommodations.

[4] A peak period charge of an additional $0.01/gal above the current price will apply over the weekday peak period when plant processes are heavily loaded with trucked waste. The District will post the peak period prices on its website and notify all customers of any changes prior to taking effect.

[5] Clean liquid food waste slurry must behave as a liquid and contain minimal amounts of contamination. Food waste slurries that require additional contamination removal do not qualify for this price.

[6] Unit cost prices are based on treatment costs (residual solids dewatering and disposal), gas production, volumes and other costs or benefits to the District. As part of the permit application process, the District will notify the customer of the unit prices to accept Solid Organic Material.

Wastewater Department

Schedule G

Capacity Fees

FY 2026

A. Wastewater Capacity Fee for Non-Permit Applicants

For applicants who are not required to obtain a Wastewater Discharge Permit the Wastewater Capacity Fee (WCF) is based on the applicant's estimated annual wastewater discharge flow and strength.

For an increase or change in water use caused by the creation of an accessory dwelling or junior accessory dwelling on a premises, WCF will be imposed only as authorized by Chapter 13 of Division 1 of Title 7 of the Government Code.

1. Single-Family Residential WCF [1,2] $3,125

2. Multi-Family Residential WCF [2, 3]

Residential	WCF ($ Per Dwelling)
For dwellings over 500 sq. ft.	$2,192
For dwellings 500 sq. ft. and under	$1,712

3. Non-Residential WCF for meters 1-1/2 inches and smaller (dollars per connection)[2]
For service connections with meters 1-1/2 inches and smaller, the District reserves the right to request specific water use information from the applicant to determine applicant's estimated annual wastewater discharge flow and strength. The District reserves the right to determine the appropriate meter size and wastewater strength category to meet the applicant's estimated annual wastewater discharge flow and strength and assess the WCF using this Section (A)(3). If the District determines that the applicant's estimated annual wastewater discharge flow exceeds 1,390 gallons per day (gpd) or that a meter larger than 1-1/2 inches is required to meet the applicant's needs, this Section (A)(3) no longer applies. For estimated annual wastewater discharge flows that exceed 1,390 gpd and meters larger than 1-1/2 inches, Section (A)(4) shall be used to determine the WCF based on the applicant's estimated annual wastewater discharge flow and strength category. The District's decision shall be final.

Strength Category	Meter Size		
	5/8 inch	3/4 & 1 inch	1-1/2 inch
Low	$4,647	$12,215	$23,796
Medium	9,404	24,722	48,161
High	18,413	48,405	94,298

4. Non-Residential (meter size over 1-1/2 inch) [2, 4, 5]

The WCF for service connections with meters larger than 1-1/2 inch shall be determined on a case-by-case basis by the District based on water use information furnished by the applicant and applying the per unit (1 unit = 748 gallons) WCF charge to the annual wastewater discharge flow calculated by the District for the appropriate strength category for the service connection.

Strength Category	$/unit/year
Low	$35.20
Medium	71.24
High	139.49

In no instance will the WCF for a meter larger than 1-1/2 inches be less than the 1-1/2 inch price for a given strength category.

If the District has determined based on the water use information furnished that a meter larger than 1-1/2 inches is appropriate or if the estimated annual wastewater discharge exceeds 1,390 gpd, the WCF calculated from the District's estimate of annual wastewater discharge flow shall apply irrespective of the arrangement of the water metering or meter size at the premises.

Business Classification Code (BCC) Category: Low Strength

Code	Description
4500	Air Transportation
7542	Automobile Washing and Polishing
7215	Coin Operated Laundromats
3200	Earthenware Manufacturing
8060	Hospitals
7000	Hotels, Motels with Food Service
7300	Laboratories
3470	Metal Coating
3400	Metal Products Fabricating
3300	Primary Metals Manufacturing
8200	Schools
2820	Synthetic Material Manufacturing
	All Other Business Classification Codes (includes dischargers of only segregated domestic wastes from sanitary conveniences)

BCC Category: Medium Strength

Code	Description
2080	Beverage Manufacturing & Bottling
2840	Cleaning and Sanitation Products
7210	Commercial Laundries
2830	Drug Manufacturing
5812	Food Service Establishments
2030	Fruit and Vegetable Canning
2040	Grain Mills
2893	Ink and Pigment Manufacturing
2810	Inorganic Chemicals Manufacturing
2600	Pulp and Paper Products
2011	Slaughterhouses

BCC Category: High Strength

Code	Description
2050	Bakeries (including Pastries)
2020	Dairy Product Processing
3410	Drum and Barrel Manufacturing
7218	Industrial Laundries
3110	Leather Tanning and Finishing
2010	Meat Products
2850	Paint Manufacturing
2077	Rendering Tallow
2090	Specialty Foods Manufacturing
2060	Sugar Processing

B. WCF for Permit Applicants

For applicants who are required to obtain a Wastewater Discharge Permit, the WCF is based on the applicant's estimated annual wastewater discharge flow and strength concentrations listed on the applicant's discharge permit at the time of application.

Permit Accounts [2, 4, 5]

Flow ($/unit/year)	$15.73
Chemical Oxygen Demand (COD) ($/lb/year)	1.65
Total Suspended Solids (TSS) ($/lb/year)	7.56

[1]Single-Family is BCC 8800 Single-Family.
[2]A credit may be provided for existing services. Where a new service will replace one or more existing or prior services to a premises that previously paid a WFC, a credit will be applied to the new WCF. For existing meters 1-1/2 inches and smaller, the value of the WCF credit will be determined using the flow and strength assumed in the original WCF and based on the current WCF schedule (for flow and strength), or based on the existing strength and meter size if the information from the original WCF is not available. For existing meters over 1-1/2 inches, the value of the WCF credit will be determined using the flow and strength assumed in the original WCF and based on the current WCF schedule (for flow and strength). If the flow and strength information is not available from the original WCF, the strength and flow from the most recent 10 years of usage and strength will be used to determine the WCF credit, provided that this value is not less than the value indicated in the schedule for the 1-1/2 inch meter.

For premises on which no WCF was paid, customers will be granted a credit for the existing use. For existing meters 1-1/2 inches and smaller, the WCF credit will be calculated based on the current WCF schedule for the existing meter size and strength. For existing meters over 1-1/2 inches, the WCF credit will be calculated based on the most recent 10 years of usage and strength for the existing meter, provided that this value is not less than the value indicated in the schedule for the 1-1/2 inch meter.

If the account is subject to an Estimation Permit, the usage credit will consider diversion. The WCF credit cannot be applied to a dedicated irrigation meter, standby meter, fire service meter, or in the case of a combination standard and fire service meter, the portion of the meter oversized for the private fire protection system.
[3]Multi-family includes BCC 6513 Apartment Buildings and 6514 Multi-Family.

[4]WCF is based on the anticipated annual flow contributions and the average wastewater strength measured or assigned for each classification of customer. The District may review the actual flow and strength within 24 months, once the business is fully established to verify the estimated demand for wastewater capacity. The review may result in a determination of additional capacity fees if the actual flow and strength exceeds the original estimate.
[5]Total fee is a summation of the unit rates for flow, COD, and TSS applied to the permit conditions at the time of application.

Wastewater Department

Schedule H

Wastewater Interceptor Connection Review, Coordination and Inspection Fees

FY 2026

SCHEDULE H – WASTEWATER DEPARTMENT
WASTEWATER INTERCEPTOR CONNECTION REVIEW, COORDINATION, AND INSPECTION FEE

EFFECTIVE 07/01/2025

TYPE	RATE
Plan Review, Project Coordination and Construction Inspection	$13,600
Each Additional Connection[1]	$11,100

[1] For additional connections submitted and constructed under the same project with the same design and pipe sizes.

EXHIBIT C

Public Records Act Fee Schedule and District Publications Fees

FY 2026

PUBLIC RECORDS ACT FEE SCHEDULE

EFFECTIVE 07/01/2025

INTRODUCTION

The following fee schedule has been established by the District to cover the costs for duplicating District documents, drawings, maps, recordings, and other records, as required by the Public Records Act.

The District offers access to its records upon receipt of a request that reasonably describes an identifiable record. Any questions or requests concerning District documents should be addressed to the Secretary of the District, East Bay Municipal Utility District, P.O. Box 24055, Oakland, California 94623-1055, emailed to SecOffice@ebmud.com, or by calling (510) 287-0404. Requests can also be sent via the portal at https://www.ebmud.com/about-us/public-records.

CHARGES

Pursuant to the Public Records Act, the District may recover the "direct costs of duplication" for disclosable public records, unless a different charge is provided by statute. The direct cost of duplication generally covers two types of expenses – materials & equipment costs and labor costs.

- Materials & Equipment costs generally include the capital cost of the equipment, the maintenance contract, paper supplies, and other necessary expenses that must be incurred to make the equipment operational.
- Labor costs ordinarily include the pro rata salary of the clerical or technical employee operating the equipment.

The total cost for providing copies is a combination of materials, labor for actual duplication time, equipment usage, and postage, if applicable. The direct cost of duplication may vary depending on the size and type of media requested and the kind of reproduction equipment required.

Photocopies of non-District materials are charged at the same rate as District materials.

Prices quoted in this fee schedule are subject to change. An estimate of cost will be provided upon request.

Any records sent outside for duplication will be billed as the actual cost of duplication by the outside vendor.

PAYMENT

For requests estimated to cost over $100 in duplication or query and compilation fees, a deposit in the amount of the estimated fee will be required before duplication.

For all requests, payment in advance is required before release of records. Acceptable methods of payment include cash or check (payable to East Bay Municipal Utility District). The District does not currently accept electronic payments.

INSPECTION/DELIVERY/PICK UP

The requestor is entitled to inspect records and/or obtain copies of records during normal business hours (8:00 a.m. to 4:30 p.m., Monday through Friday).

If the requestor wishes records to be delivered, copies will be sent first class mail unless the requestor makes other arrangements for pick up or delivery with the Secretary's Office. Postage will be charged for copies mailed to the requestor.

Federal Express service is available if the requestor supplies a Federal Express account number.

LEGAL COMPLIANCE OBLIGATIONS

Responsibility for adherence to copyright law rests with the individual requesting copies.

CATEGORIES

This fee schedule covers the following categories of document types or formats:

I. Paper Based Records

   A. General Business Documents & Engineering Drawings

   B. Printed Maps

   C. Bid Documents for Publicly Bid Projects

II. Electronically Stored or Generated Records

   A. Records that already exist

   B. Records that do not already exist

   C. Compact Disks (CDs)

   D. Digital Versatile Disks (DVDs)

Fees for document types/requests not covered herein will be provided upon request.

I. PAPER BASED RECORDS

A. GENERAL BUSINESS DOCUMENTS & ENGINEERING DRAWINGS

The fees charged for reproducing general business documents and engineering drawings, and printed maps photocopied onto regular paper in the sizes indicated below are based on the actual cost of duplication by the District.

Fee = **Labor Cost** ($0.86 per minute duplicating time)
+ Materials & Equipment Cost (e.g., cost per sheet or media)
+ Postage (if applicable)

- Labor Costs: Labor costs for duplication time is charged at the rate of $0.86 per minute. Labor costs are based on the labor rate of a clerical employee and is charged only for the actual time spent on duplication.

- Materials & Equipment: The duplicating cost per sheet or media type is based on the actual cost of materials and equipment needed to reproduce documents. As detailed below, fees will vary depending on the type and size of documents and the method used for duplication.

1) Regular copies

8-1/2 x 11	$0.09/page
11 x 17	0.17/page

2) Color copies

Requests for color copies may be sent to an outside vendor and charged back to the requestor.

4) Engineering drawings

Size	Bond	Vellum
8-1/2 x 11	$0.09	N/A
11 x 17	0.17	N/A
17 width	0.33	N/A
22 width	0.66	$1.77
28 x 38	0.96	N/A

For sizes larger than those indicated in this chart, Engineering Records will determine the cost.

Drawings having a width greater than 36 inches cannot be reproduced on District equipment and must be sent out for commercial copying. These charges will be billed to the requestor.

B. PRINTED MAPS

The fees in this section apply to the duplication of existing hard copy B-maps. The fee listed is the cost per map for duplication by the District's print shop. All other pre-printed map sizes require special formatting and the cost for duplication by an outside vendor will be determined upon request.

B-maps 250' scale (11 x 17) includes Map View prints	$0.99/map
Map Book Covers	$38.64/cover

C. BID DOCUMENTS FOR PUBLICLY BID PROJECTS

Copies of plans for publicly bid construction projects are available through the District's Specifications and Engineering Support Section at a per set cost established as each project is issued for bid. The fee will be based on the cost for duplication at the District's print shop or an outside copy service and postage, if applicable.

Pre-paid documents will be sent first class mail unless the requestor makes other arrangements for document pickup or delivery with the Specifications Clerk. Federal Express service is available if the requestor supplies a Federal Express account number. The Specifications and Engineering Support Section can be reached at specs@ebmud.com or (510) 287-1040.

Contract documents (specifications, plans, and addenda) are also available for viewing and downloading from EBMUD's public website: www.ebmud.com via the "Business Center" link.
Copies of historic contract documents can be provided in accordance with the provisions of item 1: General Business Documents.

II. ELECTRONICALLY STORED OR GENERATED DATA

The fees in this section apply to records stored electronically.

In general, there are two types of electronic records: (a) records that already exist on a system and merely require printing; and (b) records that do not currently exist and require data compilation, extraction, or programming to produce. A different fee rate applies to each of these types of records.

A. RECORDS THAT ALREADY EXIST

When a requestor seeks a record that already exists on a system (i.e., a record merely needs to be retrieved and printed, and does not require data compilation, extraction, or programming to produce), the following fee applies:

Fee = **Labor Cost** ($0.86 per minute duplicating time)
+ Materials & Equipment Cost
+ Postage (if applicable)

Materials & Equipment costs vary with the types/formats of records requested as specified below:

1) Digital copies – PDF Files (including B-maps)

Cost of Media	
CD	$3.05
DVD	6.35
Electronic Transfer	N/C

2) Maps on Demand

Size	Bond	Vellum*	Bond Color
8-1/2 x 11	$0.10	$0.19	$0.38
11 x 17	0.19	0.36	0.73
17 x 22	0.33	0.60	2.05
22 x 34	0.49	0.84	3.38
28 x 38	0.66	1.10	5.02

*Costs reflect color plots produced only from existing files.

3) Other Electronic Records

Description	Charge per Unit
8-1/2 x 11 (PC Printer)	$0.09/page
CD	3.05 each
DVD	6.35 each
Electronic Transfer	N/C

B. RECORDS THAT DO NOT ALREADY EXIST

When a requestor seeks records that do not currently exist on a system and require data compilation, extraction, or programming to produce, the requestor shall pay the cost to construct a new record, and the cost of programming and computer services necessary to produce a copy of the record. However, the District is under no obligation to provide records that do not already exist. Accordingly, the applicable fee is:

Fee = **Labor Cost** ($1.41 per minute production time)
+ Materials & Equipment Cost (rates specified in Section II.A)
+ Postage (if applicable)

Labor cost is based on the "average technical labor" rate and is charged only for the actual time spent producing the record.

This fee also applies when the request requires producing a record outside of the regularly scheduled interval.

C. COMPACT DISCS (CDs)

Fee = **Labor Cost** ($0.86 per minute duplicating time)
Cost per disc (CD-R Disc, Write-Once, 700 MB, 80 Minute, 52X = $3.05/disc)
+ Postage (if applicable)

D. DIGITAL VERSATILE DISCS (DVDs)

Fee = **Labor Cost** ($0.86 per minute duplicating time)
Cost per disc (DVD+R, 16X, Single Sided, 4.7 GB/120 Minutes = $6.35/disc)
+ Postage (if applicable)

E. DIGITAL VERSATILE DISCS (DVDs)

Recordings of regular meetings of the Board of Directors are available on www.ebmud.com. Copies of archived recordings of regular meetings of the Board of Directors are available upon request and can be provided on compact disc or digital versatile disc. Recordings after May 2019 are available for review on EBMUD's YouTube channel.

NOTE – The District no longer uses cassette tapes.

DISTRICT PUBLICATION FEES

Fee = Cost of publication (see below)
+ Sales tax
+ Postage (if applicable)

Municipal Utility District Act (printed and comb-bound)	$5.15
Electronic Transfer	N/C
Its Name Was MUD	$18.00
Plants and Landscapes for Summer Dry Climates of the San Francisco Bay Region	
Hardcover	$49.95 each
For EBMUD customers	$29.95 each
Vendors and Retailers	up to 50% discount

Real Property Use Application Fees

FY 2026

REAL PROPERTY USE APPLICATION FEES

EFFECTIVE 07/01/2025

TYPE OF USE	APPLICATION FEE
Fee Title *(Outright purchase of District property)*	
Properties for Sale	$2,917
Unsolicited	17,181
Easement *(Rights for permanent use of District property, such as access, utilities, etc.)*	
Utility Type	2,917
Other	8,002
Quitclaim *(Removal of District's right, title and interest to property)*	
Pipe Abandonment	1,463
Other	3,268
Revocable License *(Permission to use District property for periods exceeding one year, subject to revocation. For such uses as utility road crossings of aqueduct properties)*	2,340
Lease *(The right to occupy and use District land for a specified time period)*	2,918
Telecommunication Lease *(Long-term lease for PCS, cellular and/or radio uses)*	4,938
Information-Only *(Request for information requiring research of District records. Information-only applicants will be charged a fee only if the estimated research time exceeds one hour)*	186/hour
Processing and Review of Watershed Land Use Proposals *(Request for District to perform a formal evaluation of watershed land use proposal)*	186/hour (plus all other District costs)
Property Entry Permits, Rights of Entry Permits *(Permission for temporary access onto District)*	438
Limited Land Use Permit *(Allows landscaping, gardening or other minor surface use of District property, subject to annual renewal)*	160
Temporary Construction Easement/Encroachment Permit *(Permission for temporary access onto District)*	
Open Land, No District Facilities	877
With District Facilities	3,104
Survey Costs if needed *(Application use fees listed above do not include survey costs if needed)*	203/hour
Long Term Encroachment Permit	29,488

Recreation Use Fees

Calendar Year 2026

RECREATION USE FEES FOR 2026
January – December 2026[1]
EFFECTIVE 01/01/2026

The following fees apply to use of the District's recreation facilities at Camanche Hills Hunting Preserve, Camanche Reservoir, Lafayette Reservoir, Pardee Reservoir, San Pablo Reservoir and on the District's Watershed Trail System.

All other (not included in this schedule) charges and fees for merchandise and services provided to the public in connection with the public uses of the recreation areas and facilities thereat shall be determined by the concessionaire or by the District and shall be reasonable and consistent with charges for similar merchandise and services at similar locations.

General Discount Program – Discounts from fees listed may be offered to attract new customers and/or to improve revenues. General discounts will be applied for specified time frames and apply fairly and uniformly. General discounts must be approved by the Director of Water and Natural Resources Department in advance.

District employees, retirees and immediate family receive free vehicle entry and boat launch, and a camping discount equal to the car entry fee (limit one per day).

Volunteer Discount Program – Free one-year Trail Use Permit and 50% discount on vehicle entry/parking and boat launch for those who contribute an annual minimum of 20 hours of volunteer work while participating in a District Volunteer Program.

Distinguished Veteran Discount Program – Holders of the California State Parks Distinguished Veteran Pass receive free day use and boat launch at all District recreation areas.

Fishing Access Permits are required for persons 16 years of age or older. Up to four children 15 years and under and accompanied by a person who possesses a valid CA fishing license and daily fishing access permit, may fish under that fishing access permit subject to the daily possession limit of the permit holder. Every accompanied child, over the allowed number of four, must have individual fishing access permits. Each child not accompanied by a fishing access permit holding adult must obtain his/her own fishing access permit.

No Fishing Access Permit is required on the two annual California Department of Fish and Wildlife Free Fishing Days.

[1]Fee years are by calendar year for all locations except the Camanche Hills Hunting Preserve where fees are implemented earlier for the hunting year October 1 - September 30.

CAMANCHE HILLS HUNTING PRESERVE[1]	
PRESERVE LICENSE:	
Initiation Fee (Family)	$3,495.00
Initiation Fee (Corporate)	3,495.00
Annual Maintenance (Family)	300.00
Annual Maintenance (Corporate)	600.00
LICENSED GUIDE GOOSE HUNT (PER PERSON/HUNT)	200.00
ARCHERY RANGE AND COURSE	
7 Station 3-D Target Course	
Per person	12.00
FISHING ACCESS TO RABBIT CREEK ARM OF CAMANCHE LAKE AND FARM PONDS LOCATED ON CHHP RECREATIONAL AREA	
Public Fishing Access	10.00
CHHP Members Access	5.00
FISHING ACCESS TO RABBIT CREEK ARM OF CAMANCHE LAKE	
Public Fishing Access: Bow for Carp	10.00
RV PARKING AREA	
Nightly	10.00
Clubhouse Rental (daily)	500.00
Kitchen Rental (daily)	500.00
Grounds (daily)	500.00

[1]Fee years are by calendar year for all locations except the Camanche Hills Hunting Preserve where fees are implemented earlier for the hunting year October 1 - September 30.

Camanche Hills Hunting Preserve Discounts, Special Programs and Limitations

Pricing for planted bird hunting will be reviewed and approved by the Director of Water and Natural Resources.

Free bird hunting and sporting clays shooting is offered to the communications media, based on the availability of birds and sporting clays course.

Free use of the facilities is offered to non-profit hunting organizations for family, disabled and junior hunting functions.

A target shooting (sporting clay, trap, 5-stand and bunkers) discount of 15% is offered to Senior, Disabled, and active or retired military visitors.

A target shooting discount of 50% is offered to Distinguished Veteran Pass holders.

A driven pheasant shoot discount of 15% is offered to Senior, Disabled, active or retired military, and Distinguished Veteran Pass holders.

An RV parking discount of 50% is offered to Senior, Disabled and Distinguished Veteran Pass holders.

Daily field trial events are permitted on a limited basis. Fees range from $0 for qualified non-profit organizations to a maximum of $200.00.

EBMUD employees and retirees, concession employees and Tri-County (Amador, Calaveras and San Joaquin) Public Safety Personnel receive a 20% discount on food purchases and a 10% discount on sporting clays.

Discounts and incentives are separate and cannot be combined for a larger discount or incentive.

CAMANCHE RESERVOIR – NORTH SHORE AND SOUTH SHORE RECREATION AREAS

VEHICLE ENTRY/PARKING CAR/MOTORCYCLE/SMALL VAN

Daily (Peak Season: May 1-September 30, weekends and holidays)	$21.50
Daily (Off-season, Peak Season weekdays)	13.00
Nightly (non-camping)	13.00
Annual (12 consecutive months)	245.00
Annual Senior/Disabled/Former POW/Disabled Veteran (12 Consecutive Months)	122.50
Combined Car/Boat Daily (Peak Season: May 1-September 30, weekends and holidays)	25.00
Combined Car/Boat Daily (Off-season, weekdays)	18.75
Annual Marina Overnight/Day Use (12 consecutive months)	265.00

VEHICLE ENTRY/PARKING LARGE VANS AND BUSES

Large Vans – 10-20 Passengers	24.00
Buses – 21+ Passengers	46.00

DOG

Daily (Fee charged each day in park)	7.00
Annual (12 consecutive months concurrent with Annual Parking Pass)	63.00

BOAT LAUNCH

Daily Peak Season (May 1- Sept 30), weekends and holidays. (Fee charged each day in park.)	18.50
Daily Off-season; Peak Season weekdays. (Fee charged each day in park.)	13.00
Night (Fee charged each day in park)	15.00
Annual (12 consecutive months)	210.00
Senior/Disabled/Former POW/Disabled Veteran Annual (12 consecutive months)	105.00

BOAT MOORING (Buoy)

Monthly: under 30 feet	340.00
30 feet & larger	415.00
Annual (12 consecutive months, any length)	3,100.00
Annual – concurrent with Mobilehome Space rent (12 consecutive months)	1,550.00

CAMANCHE RESERVOIR – NORTH SHORE AND SOUTH SHORE RECREATION AREAS (continued)

BOAT SLIP OPEN (Excluding park entry)	
Daily	$44.00
Weekly	205.00
Monthly	460.00
8 Months	1,700.00
Key Security Deposit	15.00
BOAT SLIP COVERED – 24' Length Maximum (Excluding park entry)	
Daily	60.00
Weekly	240.00
Monthly	640.00
Annual (12 consecutive months)	2,700.00
Key Security Deposit	55.00
BOAT SLIP COVERED – Over 24' Length (Excluding park entry)	
Daily	65.00
Weekly	325.00
Monthly	775.00
Annual (12 consecutive months)	3,350.00
Key Security Deposit	55.00
RV/TRAILER/BOAT STORAGE (Excluding park entry)	
Monthly	180.00
12 Months, consecutive	950.00
Monthly – 30' Length Maximum (Concurrent with Mooring/Slip Rental)	85.00
Monthly – Over 30' (Concurrent with Mooring/Slip Rental)	120.00
Annual – 30' Length Maximum (Concurrent with Mooring/Slip Rental) (12 consecutive months)	415.00
Annual – Over 30' (Concurrent with Mooring/Slip Rental) (12 consecutive months)	550.00
Annual – concurrent with Mobilehome Space rent (12 consecutive months)	490.00
Annual – concurrent with Mobilehome Space rent (<28', 1 boat only, dry #3) (12 consecutive months)	205.00

CAMANCHE RESERVOIR – NORTH SHORE AND SOUTH SHORE RECREATION AREAS (continued)

FISHING ACCESS PERMIT	
Daily	$8.25
Annual	170.00
CAMPSITE (w/vehicle parking)	
Nightly (Peak Season: May 1 – September 30)	45.00
Nightly (Off-season)	27.00
Second Car Parking	18.00
Weekly (Peak Season: May 1 – September 30)	200.00
Weekly (Off-season)	125.00
Second Car Weekly	85.00
14 nights (Peak Season: May 1 – September 30)	395.00
14 nights (Off-season)	265.00
Camping Reservation Fee	13.50
PREMIUM CAMPSITES	
Nightly (Peak Season: May 1 – September 30)	54.00
Nightly (Off-season)	29.00
Second Car Parking	18.00
Weekly (Peak Season: May 1 – September 30)	245.00
Second Car Weekly	85.00
14 nights (Peak Season: May 1 – September 30)	485.00
14 nights (Off-season)	285.00
CAMPSITES WITH TENT STRUCTURES	
8 person nightly	90.00
8 person weekly	450.00
16 person nightly	151.00
16 person weekly	662.00
CAMPSITE (WALK-IN/BICYCLE PARKING – 8 PERSON/BIKE MAX)	
Nightly	25.50
Weekly	138.50
14 nights	262.00

CAMANCHE RESERVOIR – NORTH SHORE AND SOUTH SHORE RECREATION AREAS (continued)

GROUP CAMP (Nightly)	
12-Person Limit	$145.00
16-Person Limit	175.00
24-Person Limit	205.50
32-Person Limit	273.00
64-Person Limit	515.00
72-Person Limit	570.00
GROUP CAMP (Nightly, off-season)	
12-Person Limit	72.00
16-Person Limit	78.00
24-Person Limit	82.50
32-Person Limit	90.00
64-Person Limit	174.00
72-Person Limit	225.00
EQUESTRIAN – TURKEY HILL – 2 HORSES PER SINGLE SITE – "NO OFF-SEASON DISCOUNTS"	
General Assembly Area	110.00
Turkey Hill Single	72.00
Turkey Hill Double	138.00
Turkey Hill Triple	165.00
Turkey Hill Quad	220.00
Entire Turkey Hill (includes assembly area)	800.00
RV SITE	
Nightly	68.00
Weekly	365.00
Monthly	750.00
Season (6-Month Max)	2,250.00
Premium Sites Nightly (Peak Season)	76.00
Premium Sites Weekly (Peak Season)	390.00
TOWING	
Camanche Recreation Area per hour	175.00
MISCELLANEOUS	
Camanche Recreation Area Lake Tours	15.00

CAMANCHE RESERVOIR – NORTH SHORE AND SOUTH SHORE RECREATION AREAS (continued)

BOAT/VESSEL DECONTAMINATION	
Vessel decontamination (up to 30')	$42.00
Vessels over 30' in length	42.00 + 5.00 for each 5' over 30'
Ballast tanks decontamination	10.00
Tank, bilge, live well decontamination only	30.00
PWC storage area decontamination only	30.00
Kayaks and Canoes decontamination	30.00
COTTAGE/MOTEL GENERAL	
Camanche Recreation Area – Security Deposit	200.00
Additional Guest Charge (to maximum occupancy)	20.00
COTTAGE (4-Person Base)	
May – Sept: Night	220.00
Week	1,125.00
Oct – April: Night	146.00
Week	750.00
Month	2,050.00
COTTAGE (6-Person Base)	
May – Sept: Night	280.00
Week	1,450.00
Oct – April: Night	180.00
Week	945.00
Month	2,250.00
PARK MODEL (4-Person)	
May – Sept: Night	220.00
Week	1,125.00
Oct – April: Night	146.00
Week	750.00
Month	2,050.00
RESORT RENTAL (4 BEDROOM, 14 PERSON MAX)	
May – Sept: Night	480.00
Week	2,475.00
Oct – April: Night	255.00
Week	1,325.00

CAMANCHE RESERVOIR – NORTH SHORE AND SOUTH SHORE RECREATION AREAS (continued)

MOBILEHOME (MONTHLY)

3 bedroom	CY25 Rate + HUD FMR[2]

MOBILEHOME SPACES (MONTHLY)

North Shore 1A	CY25 Rate + HUD FMR[2]
North Shore 1B	CY25 Rate + HUD FMR[2]
North Shore 2	CY25 Rate + HUD FMR[2]
South Shore	CY25 Rate + HUD FMR[2]

*Mobilehomes registered through Amador County receive a $2.50 credit on their monthly rent to reflect their payment of fire-related fees.

OTHER MOBILEHOME FEES (PER SPACE – MONTHLY)

Guest Fee	$75.00
Late Rent/Returned Check Fee	50.00

FACILITY RENTAL

Lakeside Hall Daily (hall only)	875.00
Lakeside Hall Daily (kitchen & serviceware included)	1,300.00
Lakeside Hall Cleaning and Equipment Deposit	1,000.00
Camanche Clubhouse Rental (North Shore)	215.00
Camanche Clubhouse Rental (South Shore)	150.00
Camanche Amphitheatre (South Shore)	500.00

[2] HUD FMR is the Housing and Urban Development Fair Market Rents Index, which is published by HUD before the start of each federal fiscal year. The mobilehome rental space fee shall be adjusted annually (fee adjustment) based on the following process. Starting with the 2025 Recreation Use Fee schedule, any percent increase shall be capped at 5 percent, provided however, that the cap may increase up to a maximum 10 percent in future years. The percent change in the HUD FMR index for 2-bedroom homes shall be averaged for Amador and Calaveras Counties and shall serve as the fee adjustment, up to the applicable cap for that year. Any balance remaining that was not applied due to the cap shall be carried and applied to the following year's fee adjustment, up to the applicable cap for that year. The applicable cap for a year shall be calculated based on the table below. As with all rates, fees, and charges, the District's Board of Directors may revise this process by Board action.

Carryforward Balance from Previous Year	Annual Fee Cap
0-8%	5%
8-12%	8%
Over 12%	10%

Camanche Reservoir – North and South Shore Recreation Area Discounts, Special Programs, Limitations

Concessionaire Employees receive free entrance to and use of rental boats during off-hours, a 20% discount on food and merchandise, and a camping discount equal to the car entrance fee. Limited to one free vehicle entry and one free boat rental per employee per day.

Concessionaire and/or District may provide free entry and use of rental boats for disadvantaged groups (e.g., disabled, senior, youth, veteran), and for media to promote the recreation area.

Current Camanche Regional Park Advisory Board members and active field public safety personnel in Amador, Calaveras and San Joaquin County receive free day use entry.

Senior/Disabled receive 50% discount on annual entry and boat launch fees, and on non-holiday weekday boat rentals. Senior rates are for individuals with a driver's license or ID showing age 62 or older.

Active, reserve, retired, and veteran military personnel receive 20% discount on day use entry, boat rentals, (excluding rental of the party barge), camping and short-term (14-day) RV sites and lodging. Military identification required. Discount may not be combined with other offers.

Distinguished Veteran Pass holders receive free day use and boat launch and 50% discount on non-holiday weekday boat rentals.

Groups of four or less individuals meeting the criteria for disabled discounts shall be eligible to rent the 6-person ADA cottages at Camanche for the 4-person cottage rate.

Turkey Hill Equestrian Campground single site customers renting larger spaces due to single sites being occupied shall be charged the lesser prorated rate.

Concessionaire or District can issue return coupons for free entry or camping for dissatisfied customers.

Groups participating in volunteer District facility improvement programs receive 50% discount on entry and camping fees.

Short-term visitor passes may be issued for periods up to one-hour.

Campsite charges include one vehicle entry, and RV site charges include a second/tow vehicle. Monthly and Seasonal RV Park fees include one vehicle entry, but do not include electricity charge. Electricity is metered and charged separately. Each of the daily charges, except the fishing access permit, shall be valid and effective for the calendar day upon which the charge was made, from one hour before sunrise until one hour after sunset.

Fishing access permits are valid until midnight of said day.

Camanche Reservoir – North and South Shore Recreation Area Discounts, Special Programs, Limitations (continued)

Each of the weekly charges shall be valid and effective for the calendar week in which the charge is made, terminating at 1:00 p.m. on the seventh consecutive day of said period. The seasonal charges noted for each recreation area shall be valid and effective for a period not exceeding 24 consecutive hours and terminating at 1:00 p.m. during said period.

Check out time for all RV sites is 1:00 p.m.

Peak Season is May 1 – September 30. Off-season is October 1 – April 30.

Premium Campsite or Premium RV site is a site that due to enhanced amenities, waterfront access or other special features is rented at a higher rate than a standard site.

Standard campsites may have a maximum of 8 people and 2 vehicles.

Short-term visitor passes may be issued for periods of up to one-hour.

LAFAYETTE RECREATION AREA

ENTRY AND PARKING – CAR/MOTORCYCLE/SMALL VAN	
Daily	$7.00
Annual (new or renewal)	140.00
Replacement hang-tag (Replacement limited to 1 hang-tag per year)	25.00
Parking Meters 1/2 hour	1.00
Senior/Disabled	
Season (new or renewal)	90.00
ENTRY AND PARKING – LARGE VANS AND BUSES	
Large Vans – 10-20 Passengers	22.00
Buses – 21+ Passengers	40.00

COMMERCIAL USES (in addition to the base fee noted below, the Director of Water and Natural Resources may set an additional fee to recover the District's direct costs plus overhead)

Commercial Use	
Small (up to 10 people)	120.00
Medium (from 11 to 50 people)	600.00
Large (from 51 to 150 people)	1,200.00
BOAT LAUNCH	
Daily	4.00
Annual	100.00
Boat Inspection Fee	6.00
FISHING ACCESS	
Daily	6.00
GROUP PICNIC	
Small Site (Weekend/Holiday)	200.00
Small Site (Weekday/Non-Holiday)	100.00
Large Site (Weekend/Holiday)	350.00
Large Site (Weekday/Non-Holiday)	175.00
Special Events Fee	500.00 + $1/participant
Security Deposit	100.00

Lafayette Reservoir – Discounts, Special Programs, Limitations

District may provide free entry and use of rental boats for disadvantaged groups (e.g., disabled, senior, youth, veteran), and for media to promote the recreation area.

Senior/Disabled receive 50% discount on boat launch fees and on non-holiday weekday boat rentals. Senior rates are for individuals with a drivers' license showing age 62 or older.

Distinguished Veteran Pass holders receive free day use and boat launch and 50% discount on non-holiday weekday boat rentals.

PARDEE RECREATION AREA

VEHICLE ENTRY AND PARKING – CAR/MOTORCYCLE/SMALL VAN	
Daily/Nightly (Non-Camping)	$13.00
Season	145.00
Combined Car/Boat Daily	20.00
VEHICLE ENTRY AND PARKING – LARGE VANS AND BUSES	
Large Vans – 10-20 Passengers	24.00
Buses – 21+ Passengers	46.00
DOG	
Daily (Fee charged each day in park)	6.50
Season (Concurrent with Season Parking Pass)	60.00
STANDARD BOAT LAUNCH	
Daily (Fee charged each day in park)	13.00
Season	135.00
CARTOP BOAT LAUNCH (Float Tube, Kayak, Canoe, Scull)	
Daily	6.00
Season	60.00
BOAT SLIP (excluding park entry)	
Daily	13.00
Weekly	65.00
Monthly	140.00
Season	800.00
Season (concurrent with season RV)	750.00
FISHING ACCESS	
Daily	8.25
Annual	200.00
POOL USE	
Pool Access Wristband	3.50
Pool Access Wristband - Senior	2.50
MISCELLANEOUS	
RV/Campsite Reservation Fee	11.00

PARDEE RECREATION AREA (continued)

STANDARD CAMPSITE (w/vehicle parking)	
Nightly	$35.00
Second Car Parking	13.00
Weekly	160.00
Second Car Parking	65.00
PREMIUM CAMPSITE (w/vehicle parking)	
Nightly	40.00
Weekly	200.00
CAMPSITE (walk-in/bicycle parking)	
(8 person/8 bike maximum)	
Nightly	25.00
Weekly	138.50
DOUBLE CAMPSITE (16 people/2 vehicles)	
Nightly	60.00
Third or Fourth Vehicle	13.00
RV SITE	
Nightly	50.00
Weekly	300.00
Monthly	600.00
Season	4,505.00
Season – Premium Site	4,648.00
RV/TRAILER/BOAT STORAGE (excluding park entry)	
Weekly	40.00
Monthly	90.00
Season	600.00
Season – concurrent with season RV site	475.00
12-Month Consecutive	800.00
TOWING	100.00
RESERVABLE SITE/FACILITY (charges in addition to above fees)	
Small (25 or less people)	75.00
Medium (26-100 people)	125.00
Large (101-150 people)	175.00
Over 150 people	300.00
Café/Pool Day Use Area (refundable deposit)	60.00

PARDEE RESERVOIR – DISCOUNTS, SPECIAL PROGRAMS, LIMITATIONS

Concessionaire Employees receive free entrance to and use of rental boats during off-season hours, a 20% discount on food and merchandise, and a camping discount equal to the car entrance fee. Limited to one free vehicle entry and one free boat rental per employee per day.

Concessionaire and/or District may provide free entry and use of rental boats for disadvantaged groups (e.g., disabled, senior, youth, veteran), and for media to promote the recreation area.

Current Camanche Regional Park Advisory Board members and active field public safety personnel in Amador, Calaveras and San Joaquin County receive free day use entry.

Senior/Disabled receive 50% discount on annual entry and boat launch fees, and on non-holiday weekday boat rentals. Senior rates are for individuals with a driver's license or ID showing age 62 or older.

Active, reserve, retired, and veteran military personnel receive 20% discount on day use entry, boat rentals, (excluding Deluxe Pontoon), and dry camping (excluding RV hook-up sites). Military identification required. Discount may not be combined with other offers.

Distinguished Veteran Pass holders receive free day use and boat launch and 50% discount on non-holiday weekday boat rentals.

Concessionaire or District can issue return coupons for free entry or camping for dissatisfied customers.

Groups participating in volunteer District facility improvement programs receive 50% discount on entry and camping fees.

Campsite charges include one vehicle entry, and RV site charges include a second/tow vehicle.

Monthly and Seasonal RV Park fees include one vehicle entry, but do not include electricity charge. Electricity is metered and charged separately.

Each of the daily charges, except the fishing access permit, shall be valid and effective for the calendar day upon which the charge was made, from one hour before sunrise until one hour after sunset. Fishing access permits are valid until midnight of said day.

Each of the weekly charges shall be valid and effective for the calendar week in which the charge is made, terminating at 1:00 p.m. on the seventh consecutive day of said period.

Each of the nightly charges shall be valid and effective for a period not exceeding 24 consecutive hours and terminating at 1:00 p.m. during said period.

Premium Campsite or Premium RV site is a site that due to enhanced amenities, waterfront access or other special features is rented at a higher rate than a standard site.

PARDEE RESERVOIR – DISCOUNTS, SPECIAL PROGRAMS, LIMITATIONS (continued)

Standard campsites may have a maximum of 8 people and 2 vehicles.

Short-term visitor passes may be issued for periods up to one hour.

SAN PABLO RECREATION AREA

ENTRY AND PARKING – CAR/MOTORCYCLE/SMALL VAN	
Daily	$7.00
Daily (Special Events)	5.00
Season	120.00
Replacement Pass (limited to 1 pass per year)	25.00
ENTRY AND PARKING – LARGE VANS AND BUSES	
Large Vans – 10-20 Passengers	22.00
Buses – 21+ Passengers	40.00
COMMERCIAL USES (in addition to the base fee noted below, the Director of Water and Natural Resources may set an additional fee to recover the District's direct costs plus overhead)	
Small (up to 10 people)	120.00
Medium (from 11 to 50 people)	600.00
Large (from 51 to 150 people)	1,200.00
STANDARD BOAT LAUNCH	
Daily	8.00
Season (Entry & Boat Launch)	170.00
Boat Inspection Fee	10.00
CARTOP BOAT LAUNCH (Float Tube, Kayak, Canoe, Scull)	
Daily	4.00
Season (Entry and Cartop Launch)	124.00
FISHING ACCESS	
Daily	7.00
GROUP PICNIC	
Large Sites (Oaks) daily	300.00
Large Sites (Pines) daily	200.00
Security Deposit	100.00
GAZEBO, Daily Rental	100.00
Security Deposit	100.00
TOWING	40.00

SAN PABLO RESERVOIR – Discounts, Special Programs, Limitations

Concessionaire Employees receive free entrance to and use of rental boats during off-season hours, a 20% discount on food and merchandise. The discount is limited to one free vehicle entry and one free boat rental per employee per day. To qualify, a concession employee must work a minimum of 20 hours per week, Sunday through Saturday.

Concessionaire and/or District may provide free entry and use of rental boats for disadvantaged groups (e.g., disabled, senior, youth, veteran), and for media to promote the recreation area.

Concessionaire or District can issue return coupons for free entry or camping for dissatisfied customers.

Each of the daily charges, including the fishing access permit, shall be valid and effective for the calendar day upon which the charge was made, from the time the park opens until it closes each day.

Groups participating in volunteer District facility improvement programs receive 50% discount on entry fees.

Senior/Disabled receive 50% discount on season passes and on non-holiday weekday boat rentals. Senior rates are for individuals with a driver's license or ID showing age 62 or older.

Distinguished Veteran Pass holders receive free day use and boat launch and 50% discount on non-holiday weekday boat rentals.

Unless determined otherwise, the recreation season is mid-February through November (dates selected by concessionaire with District approval).

WATERSHED TRAIL SYSTEM

WATERSHED TRAILS

Daily Permit	$3.00
Annual Permit	10.00
Three-Year Permit	20.00
Five-Year Permit	30.00
Low-income Annual Permit	0.00

EXHIBIT D

Stantec

East Bay Municipal Utility District

Water System Capacity Charge Study

June 1, 2021

Mr. Richard Lou, Principal
Management Analyst
East Bay Municipal Utility
District
375 Eleventh St.
Oakland, CA 94607

Re: Water System Capacity
Charge Study - Final Report

Dear Mr. Lou,

Stantec and Hildebrand Consulting are pleased to provide you with this report of findings from the Water System Capacity Charge Study (Study) completed for the East Bay Municipal Utility District. We appreciate the fine assistance provided by you and all the members of the District staff who participated and contributed to the Study.

The key findings and recommendations are outlined in the enclosed report and provide a framework for the District's continued use of water system capacity charges to fund water system infrastructure necessary to serve new water connections.

If you or others at District have any questions, please do not hesitate to call me at (202) 585-6391 or send an email to david.hyder@stantec.com. We appreciate the opportunity to be of service to the District and look forward to the possibility of doing so again in the future.

Sincerely,

David Hyder
Senior Principal/Project Manager

William Zieburtz
Director/Project Director

Mark Hildebrand
Subconsultant Hildebrand Consulting

Enclosure

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EXECUTIVE SUMMARY

This Executive Summary presents an overview of the results of the Comprehensive Water System Capacity Charge Study (Study) that was completed for the East Bay Municipal Utility District (hereafter referred to as EBMUD or the District). While the Executive Summary presents the primary findings and recommendations developed during the study, the full report outlines all of the key assumptions, methodology and detailed analyses completed to arrive at the results of the Study and should be referenced to gain a full understanding of the analysis.

Background

The District utilizes Water System Capacity Charges (SCC) to recover proportional shares of the costs of water supply, treatment, and distribution system investments from new customers joining the water system or customers requiring increased system capacity. The SCCs are designed to recover the proportionate capacity-related costs of new connections on the water system. EBMUD's SCC program recognizes differences in typical demand profiles and capacity costs across the three regions within the District's service area. This SCC Study provides a comprehensive review of the District's SCC calculation methodology, including the calculation of the unit cost per 100 gallons per day, as well as the demand basis for assessing the charge to individual applicants.

The formula used by the District to calculate SCCs is shown in Figure ES-**1**. Ultimately, the SCC is determined by multiplying the unit cost of system capacity by the customer's estimated capacity requirement, both of which are calculated specifically for each of the three regions.

Figure ES-1: SCC Formula

Our review and recommendations related to these two primary components of the SCC are outlined in the following sections.

Unit Cost Determination

SCC unit costs were evaluated based on the existing systemwide, regional, and future water supply assets and their respective capacity to provide service to the District's customers. Based on our review of the current methodology, industry standards and the District's historical and ongoing investments in the water system, the following changes are recommended for the determination of the unit cost.

- Update existing asset valuation from replacement cost new (RCN) for all assets to a mix of RCN and a replacement cost new less depreciation (RCNLD) to account for the ongoing investments occurring within some asset classes.

- Update the asset register to include all previously completed future water supply projects and include these costs within the buy-in component of the SCC unit costs.
- Update the future water supply cost component of the SCC unit cost calculations to only reflect projects that are yet to be completed.
- Update the assumed system-wide and regional potable consumption to reflect the latest projections from the District's 2050 Demand Study.

Table ES-1 presents the summary of the updated FY 2022 unit costs for each of the individual SCC components based on the methodology outlined above. The current total unit costs are provided for comparison purposes.

Table ES-1: Updated SCC Unit Costs for FY 2022

	Unit Costs $/100 gpd				
Region	**System-Wide Buy-In**	**Regional Buy-In**	**Future Water Supply**	**Total**	**Current Total**
Region 1	$3,575	$1,787	$798	**$6,160**	**$6,463**
Region 2	$3,575	$4,585	$798	**$8,958**	**$8,708**
Region 3	$3,575	$2,720	$798	**$7,093**	**$6,903**

Estimated Customer Use

Currently, the District assesses SCCs to new customers based on an assumed average water use for single family residential (SFR), multi-family residential (MFR), and non-residential customer classes. As part of this Study, recent water use data from 2005 to 2017 was analyzed to update typical water use characteristics for each customer class, both system-wide and in each region. Based on our review of the historical usage patterns, the District's current methodology for developing estimated customer use by customer class and industry standards, the following changes are recommended for calculating projected customer usage for meters under 2":

- The recommended methodology calculates the average water use by customer class and meter size based on historic observed water consumption from detailed EBMUD billed water consumption data and the EBMUD 2020 Demand Study analysis. This would replace the existing approach which calculates the average water use for a 5/8" and 3/4" metered customer and then escalates the projected water use based on an AWWA meter equivalence schedule and uses updated information to more closely reflect water use for larger meter sizes.
- The recommended methodology proposes not to distinguish between regions with respect to the assumed consumption level for MFR dwelling units but would differentiate the estimated demand based on MFR dwelling unit size. Observed MFR dwelling unit water use was relatively consistent between the SCC regions, so the analysis of more detailed MFR water use by dwelling size lends to the combination of the SCC regions. For the analysis, dwelling unit size data was derived from county records and linked to MFR water use. This updated use would replace the existing methodology which calculates a single use for all multi-family residential units, regardless of size, but differentiated by region.

The following tables present the estimated water use based on our recommended approach and analysis and for application within the assessment of the SCC for each customer class.

Table ES-2: Single Family Customer Water Use (gallons per day)

	Meter Size		
Region	**5/8" & 3/4"**	**1"**	**1 ½"**
Region 1	190	270	345
Region 2	210	450	580
Region 3	490	750	965

Table ES-3: Multi-Family Customer Water Use (gallons per day)

	Dwelling Unit Size	
Region	**< 500 sq. ft**	**> 500 sq. ft**
Service Area Wide	95	120

Table ES-4: Non-Residential Customer Water Use (gallons per day)

	Meter Size			
Region	**5/8"**	**3/4"**	**1"**	**1 ½"**
Region 1	246	402	765	1,995
Region 2	334	478	856	2,430
Region 3	460	704	1,254	3,089

The proposed SCCs are calculated by applying the formula shown in Figure ES-**1**. The unit cost for each region was multiplied by the estimated water use for each customer class and meter size or dwelling unit. Estimated water use was derived from an analysis of billed water consumption data, the 2020 Demand Study and county records. Table ES-5 summarizes the current and proposed SCCs by customer class and meter size. The table demonstrates that the proposed SCCs for all customer classes are lower than the charges currently assessed by the District. For SFR, MFR and non-residential applicants, the proposed SCC will be reduced for nearly all customers from 5% to over 50% depending on the customer class and meter size, except for the nonresidential 1½" meter size, which will remain about the same as the current SCC.

Table ES-5: Current and Proposed SCC Schedule

Customer Type	Region	Current SCC	Proposed SCC
SFR 3/4"	Region 1	$18,100	$11,705
	Region 2	$31,350	$18,811
	Region 3	$40,040	$34,754
SFR 1"	Region 1	$30,230	$16,633
	Region 2	$52,350	$40,309
	Region 3	$66,870	$53,195

Customer Type	Region	Current SCC	Proposed SCC
SFR 1 ½"	Region 1	$60,460	$21,253
	Region 2	$104,700	$51,954
	Region 3	$133,740	$68,444
Non-Residential 5/8”	Region 1	$25,850	$15,151
	Region 2	$46,590	$29,960
	Region 3	$43,140	$32,619
Non-Residential 3/4”	Region 1	$38,780	$24,763
	Region 2	$69,890	$42,831
	Region 3	$64,710	$49,935
Non-Residential 1”	Region 1	$64,760	$47,118
	Region 2	$116,720	$76,663
	Region 3	$108,070	$88,960
Non-Residential 1 ½"	Region 1	$129,520	$122,871
	Region 2	$233,440	$217,654
	Region 3	$216,140	$219,086
MFR per unit (<500 sqft)	Region 1	$10,530	$5,852
	Region 2	$14,630	$8,510
	Region 3	$13,740	$6,738
MFR per unit (>500 sqft)	Region 1	$10,530	$7,392
	Region 2	$14,630	$10,749
	Region 3	$13,740	$8,511

1.0 SYSTEM CAPACITY CHARGE BACKGROUND

1.1 BACKGROUND

East Bay Municipal Utility District owns and operates a water system that serves approximately 1.4 million people across a 332 square mile area, extending from Crockett on the North, San Lorenzo on the South, and Walnut Creek and San Ramon Valley to the East. The Bay Area has and continues to be experiencing an increase in housing demand and shortages which are shifting development toward urban infill. Much of the recent and projected housing production is in the form of multi-unit complexes. The District's water treatment and distribution system has been constructed with sufficient capacity to meet existing and future water demand; however, additional water supplies are required to meet the District's projected water demands.

In publicly owned utilities, rate payers finance the construction, renewal, and replacement of system assets through user rates, taxes, and other fees. When new connections are added to the system, they receive services through infrastructure that has been funded by existing customers. It is common for utilities to impose charges or fees to fund the capital improvements required to serve growth and new or expanded development.

The District utilizes Water System Capacity Charges (SCC) to recover from new customers a share of the costs of constructing future water supply projects, and existing public facilities for storage, transmission, treatment and distribution that are of proportional benefit to the person or property being charged. The SCC program allows EBMUD to adhere to the principle of '*growth-pays-for growth*' which recovers the cost of providing system capacity to new customers for both existing system infrastructure and the additional future water supplies that will be needed to meet new demand. The SCCs are designed to recover the proportionate capacity-related costs of new connections on the water system. EBMUD's SCC program recognizes differences in typical demand profiles and capacity costs across the three regions within the District's service area. The charge basis used by the District has been updated multiple times since the inception of the SCC in 1983, with the charge escalated annually using the Engineering News Record (ENR) construction cost index.

The SCC is comprised of three components: a system-wide component, a regional component, and a future water supply component. The system-wide component is calculated to ensure new or upsized connections pay for their proportionate share of the value of existing facilities that serve the entire service area. The regional component serves the same purpose, but for specific facilities that primarily benefit the water service within to the individual regions (Figure 1-1). Finally, the future water supply component is established to collect the incremental cost of constructing future water supply projects to serve new or upsized connections.

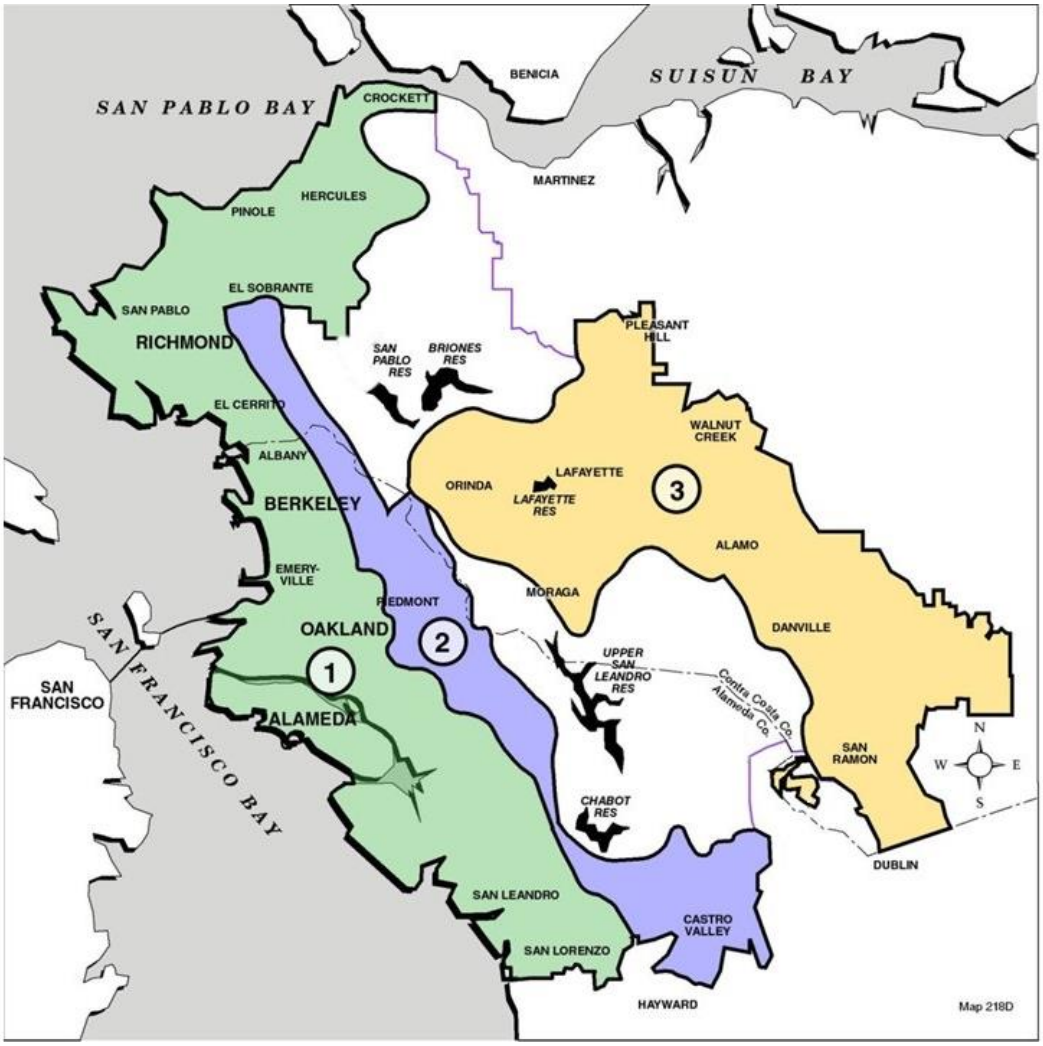

Figure 1-1: East Bay Municipal Utility District SCC Regions.

The methodology used by the District to calculate SCCs is shown in Figure 1-2**Error! Reference source not found.**. Ultimately, the SCC charged to new connections or existing customers requiring additional capacity is determined by multiplying the unit cost of system capacity by the customer's estimated capacity requirement, both of which are calculated specifically for each of the three regions.

Figure 1-2: SCC Formula

1.2 SCOPE OF WORK

The scope of work completed by Stantec and Hildebrand Consulting for the District can be summarized into four primary tasks:

Task 1: Update the unit cost of system-wide and regional capacity, expressed in hundreds of gallons per day (100 gpd) using the most current available District data (Section 2).

Task 2: Conduct a water use analysis by region to determine the estimated capacity use by customer class (Section 3).

Task 3: Evaluate the structure of the SCC for each customer class (Section 3).

Task 4: Develop an updated schedule of SCCs for each customer class by region (Section 4) based on Task 1 through 3.

The SCC Study provides a comprehensive review of the SCC calculation methodology, including the calculation of the system-wide and regional components, the calculation of the incremental cost of future water supply, and the demand basis for assessing the charge to individual applicants. Each element of the SCC methodology was evaluated, to not only update the values used to calculate SCC's, but also update the District's approach where appropriate. The unit cost of capacity was updated by considering the District's approach to assessing the value of existing and growth-related infrastructure, how assets are allocated to each region in the District, and the projected consumption by each region. The estimated water demands for each customer class were reviewed by evaluating historic water use data to update the typical water use characteristics for each customer class, both system-wide and in each region.

2.0 SYSTEM CAPACITY CHARGE UNIT COST EVALUATION

This section of the report outlines the methodology used to evaluate the SCC unit cost for each region.

In the water utility industry, there are three primary approaches used to calculate the unit cost of system capacity for development of system capacity charges. The "buy-in" method calculates the unit cost of capacity solely on the value of existing utility system assets. This approach is most appropriate for system assets with sufficient excess capacity to serve anticipated growth. The "incremental cost" method is based on the estimated cost of providing new system capacity to serve growth. Because, the District has sufficient excess capacity within its current treatment and distribution facilities for new growth but must build new dry year water supply projects for new customers, the District uses the third approach which is a combination of the first two approaches to determine a combined unit cost of capacity for inclusion in the SCC.

Figure 2-1 depicts how the District calculates SCCs on a regional basis. The system-wide unit cost and the regional unit costs are based on existing assets, and therefore the buy-in method is used. The District's future water supply includes new capital improvement projects to expand the existing supply, and therefore uses the incremental method.

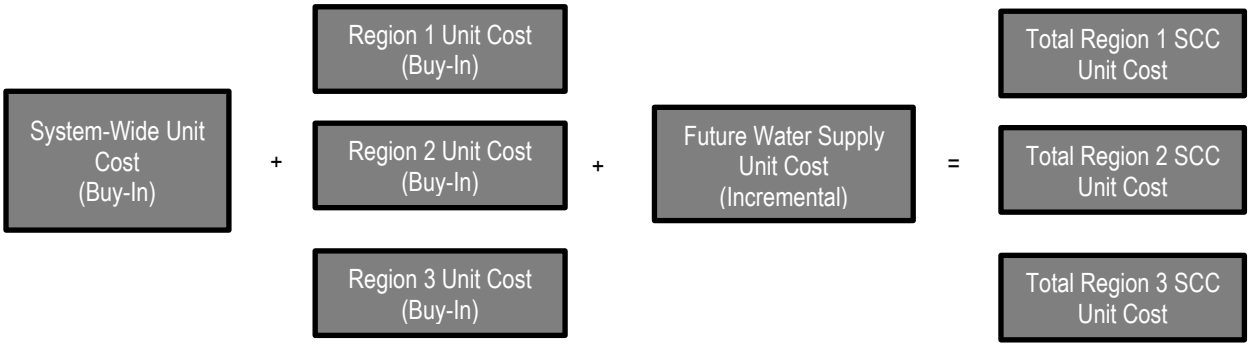

Figure 2-1: Total SCC Unit Cost Determination

2.1 SYSTEM-WIDE AND REGIONAL COSTS (BUY-IN COMPONENT)

To evaluate the value of the buy-in method components, the existing assets, available cash on hand designated for capital projects, and any outstanding debt on system assets were reviewed along with the most recent forecast of system-wide and regional water demands (forecasted potable metered consumption) from the District's 2050 Demand Study. Figure 2-2 demonstrates the components and the steps used to calculate both the system-wide and regional unit costs. The methodology to develop these buy-in component unit costs are explained in the following sections of this report.

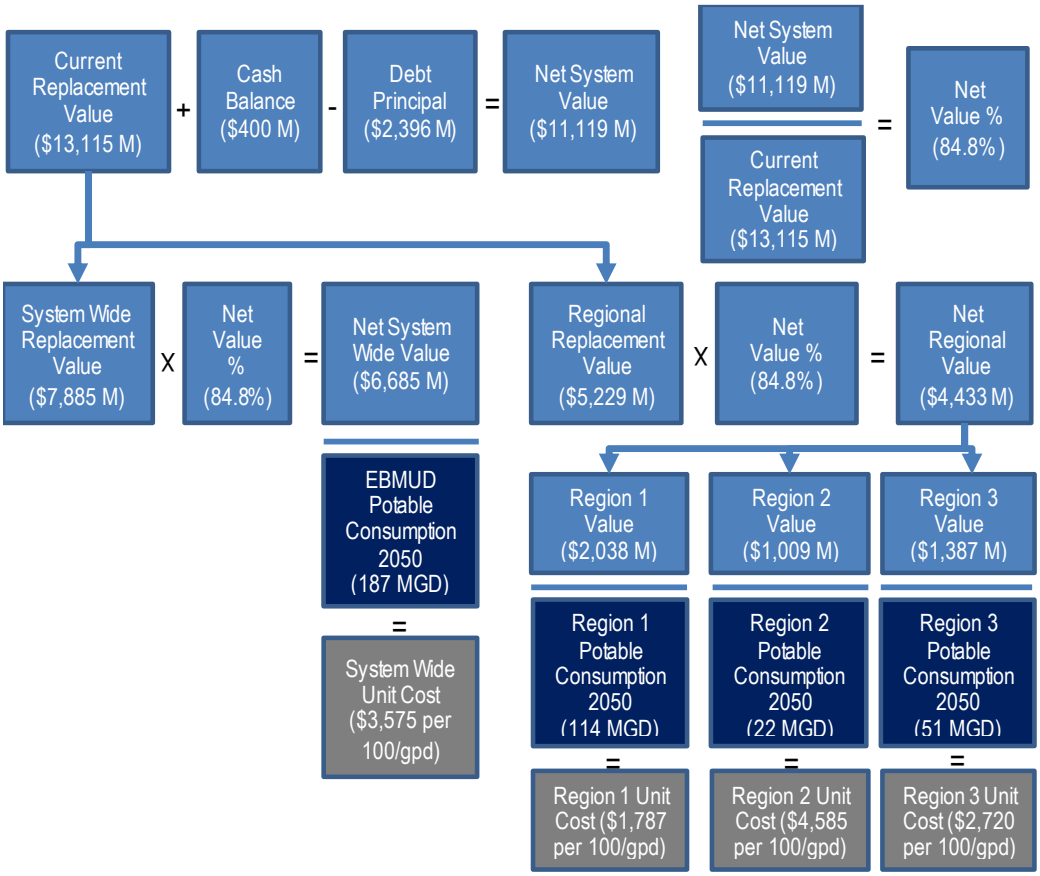

Figure 2-2: System Wide and Regional Unit Cost Determination

The District provided Stantec an asset register for the water system which included an asset identification number, description, service date, original cost, the expected useful life, accumulated depreciation, salvage value, and the net book value for each asset installed through June 30, 2019. The District's system asset register was used to calculate the value of each class of asset, as well as distinguish between the individual assets that serve the entire service area or specifically serve an individual region.

The District has historically used a replacement cost approach for valuing all existing system assets, which takes the original cost of the asset then inflates the value to current dollars using the ENR index. This study proposes to retain the replacement cost asset valuation approach for long lived assets that are not being actively replaced such as terminal reservoirs, reclamation facilities, the Freeport project, and land. For facilities that are actively being replaced, such as pipelines, pumping plants, distribution reservoirs, and equipment, we recommend that the replacement costs of these assets be adjusted to reflect their estimated remaining useful life (based on age, existing condition and the typical useful life of the asset). Additionally, while the District's distribution mains and aqueducts have an average accounting useful life of 65-years and 75-years respectively, many of these assets have a much longer useful life in practice. To account for this, we recommend utilizing a 100-year useful life for these assets. Laterals and water meters only provide benefits to individual customers are excluded from the SCC system and regional asset analysis. Table 2-1 documents each of the assets by type, the original cost, valuation

approach updated per Stantec's recommendations, and the resulting asset value used in the analysis. The sum of the value of the asset classes yields the total current asset replacement value.

Table 2-1: Summary of Asset Valuation by Asset Type

Account	Description	Original Cost	Valuation Approach	Systemwide or Regional	Asset Value in Analysis
1001	Auto Control System	$ 69,616,886	RCN	Systemwide	$ 154,642,381
1005	Hydroelectric Power Gen.	50,165,544	RCN	Systemwide	164,047,498
1007	General Facilities & Equip.	3,002,422	RCN	Systemwide	3,959,911
1015	Source of Water Supply	116,244,212	RCN	Systemwide	881,552,215
1025	Raw Water Transmission	326,793,370	RCN	Systemwide	2,696,194,198
1060	Raw Water Trans Pump	40,844,897	RCN	Systemwide	345,227,796
1080	Terminal Reservoirs	193,360,238	RCN	Systemwide	1,037,966,685
1090	Reclamation Facilities	111,457,846	RCN	Systemwide	184,510,160
1100	Water Treatment	379,876,736	RCN	Regional	1,143,923,058
1130	Distribution Pumping	176,813,081	RCNLD	Regional	219,842,897
1140	Distribution Reservoirs	338,690,760	RCNLD	Regional	529,167,785
1166	Distribution Mains	1,133,134,095	RCNLD	Regional	2,836,247,463
1170	Distribution Aqueducts	89,169,460	RCNLD	Regional	159,023,872
1175	Pressure Regulators	30,625,255	RCN	Regional	89,505,607
1180	Venturi Meters	6,032,937	RCN	Regional	18,699,944
1185	Distribution Hydrants	55,112,392	RCN	Regional	232,902,753
1200	General Plant Structures	217,567,238	RCN	Systemwide	469,295,872
1205	Equipment-Trans & Constr.	50,498,327	RCNLD	Systemwide	50,275,350
1210	Equipment-Office	19,922,148	RCNLD	Systemwide	3,295,337
1215	Equipment- Eng. & Labor	3,699,288	RCNLD	Systemwide	374,794
1220	Equipment-Tools & Work	4,516,067	RCNLD	Systemwide	1,134,214
1225	Equipment- Stores	7,894	RCNLD	Systemwide	9,406
1230	Equipment- Shop	1,688,016	RCNLD	Systemwide	892,489
1240	Non-Operative Property	1,397,142	RCN	Systemwide	5,833,705
1245	Recreational Facilities	68,448,912	RCN	Systemwide	111,704,109
1300	Land Source of Supply	7,832,091	RCN	Systemwide	113,246,007
1310	Land Raw Water Trans	3,710,592	RCN	Systemwide	53,910,171
1315	ROW Raw Water Trans	1,229,538	RCN	Systemwide	3,691,660
1320	Land Terminal Reservoirs	18,931,841	RCN	Systemwide	227,461,099
1330	Land Water Treatment	2,974,390	RCN	Systemwide	22,292,870
1340	Land Reclamation	2,174,793	RCN	Systemwide	4,572,465
1350	Land Distribution	7,928,007	RCN	Systemwide	66,126,240
1355	Land	1,737,088	RCN	Systemwide	4,758,236
1360	Land General Plan	7,714,529	RCN	Systemwide	33,118,514
1370	Land	990,966	RCN	Systemwide	22,358,708
1910	Unallocated As-Built Costs	10,304,085	RCN	Systemwide	20,679,581
1911	Deferred Software Costs	66,439,595	RCN	Systemwide	116,044,022
1981	Watershed Master Plan	5,900,230	RCN	Systemwide	11,512,918
1985	Lab Expansion Costs	8,874,204	RCN	Systemwide	17,935,857
1988	Engineering & Env. Studies	74,404,275	RCN	Systemwide	197,250,866
	DERWA	84,784,101	RCN	Systemwide	60,441,633
	Freeport	410,009,849	RCN	Systemwide	276,032,066
	CWIP	522,919,362	RCN	Systemwide	522,919,362
	TOTAL	**$3,525,262,123**			**$13,114,581,773**

District staff identified which assets serve specific regions and which assets serve all customers to allow for determination of the systemwide and regional costs. Allocation factors were generated based on the proportionate value of the regional assets obtained from the prior SCC regional asset report (**Error! Not a**

valid bookmark self-reference.)**Error! Reference source not found.**. These allocation factors were used to distribute the value of the asset types shown in each region.

Table 2-2: Regional Asset Value Allocation Factors

Account	Description	Region 1	Region 2	Region 3
1100	Water Treatment	49.5%	16.3%	34.2%
1130	Distribution Pumping	19.6%	34.1%	46.4%
1140	Distribution Reservoirs	27.4%	36.7%	35.9%
1166	Distribution Main	48.6%	21.3%	30.1%
1170	Distribution Aqueducts	79.4%	20.6%	0.0%
1175	Pressure Regulator	26.2%	60.9%	12.8%
1180	Venturi & Cathodic	62.3%	5.4%	32.2%
1185	Distribution Hydrants	47.8%	17.1%	35.1%

The net system value was then calculated by adding the District's capital reserve cash balance, net the outstanding principal on current debt, to arrive at the current asset replacement value (Table 2-3). The current replacement value was then divided by the net system value to calculate the net value percentage.

Table 2-3: Net System Value Calculation

Buy-In Component	Value
System Assets	$ 13,114,581,773
Capital Reserve Cash Balance	400,111,000
Outstanding Principal on Debt	(2,396,190,000)
Net System Value	**$ 11,118,502,773**
Net System Value as a Percentage of System Assets	**84.8%**

The current asset replacement value of the system-wide assets and the respective regional assets were then multiplied by the net value percentage to calculate the respective net system-wide and net regional values (Table 2-4).

Table 2-4: Net System Value Calculation by Service Area

Service Area	Replacement Value	Net Value %	Net Value
System Wide Replacement Value	$ 7,885,268,394	84.8%	$ 6,685,106,702
Region 1 Replacement Value	2,403,566,343	84.8%	2,037,736,278
Region 2 Replacement Value	1,189,696,740	84.8%	1,008,621,299
Region 3 Replacement Value	1,636,050,295	84.8%	1,387,038,493
Total Value	**$ 13,114,581,773**		**$ 11,118,502,773**

Finally, the system unit cost (expressed in dollars per hundred gallons per day) is calculated by dividing net values (Table 2-4) by the total estimated demand for each respective service area. These estimated demands were based on the District's 2050 Demand study, which projected water demands for the entire District and for each region between 2020 and 2050. The projected net system-wide demand for 2050 is

187 million gallons per day (MGD). Dividing net system-wide and regional values by their respective system demands allows for the determination of the unit costs (Table 2-5).

Table 2-5: Unit Cost Calculation by Service Area

Service Area	Net Value	Potable Consumption Estimate (MGD)	Unit Cost ($/100 gpd)
System Wide Replacement Value	$ 6,685,106,702	187	$ 3,575
Region 1 Replacement Value	$ 2,037,736,278	114	$ 1,787
Region 2 Replacement Value	$ 1,008,621,299	22	$ 4,585
Region 3 Replacement Value	$ 1,387,038,493	51	$ 2,720

2.2 FUTURE WATER SUPPLY (INCREMENTAL COMPONENT)

Historically, the calculation of the cost of future water supply projects included the portion of previously completed water supply projects that were allocated to new or upsized accounts. To be consistent throughout the calculations for the SCCs, we recommend that the cost of the completed projects be moved into the buy-in component of the SCC calculation. As a result, the new future water supply unit cost calculation is therefore simplified to only include future growth-related capital projects. These future water projects include various water recycling projects, Bayside Phase 2 Groundwater Project, and the San Joaquin Groundwater Banking Project. Table 2-6 provides a summary of the future water supply projects and their estimated cost. District Staff anticipates that these projects will produce sufficient water supplies to meet the projected 55 MGD increase in water demand by 2050.

Table 2-6: Future Water Supply Capital Projects

Future Water Supply Unit Cost Components		Total CIP
Recycled Water Projects		
San Ramon Valley Recycled Water Project	$	50,000,000
East Bayshore Recycled Water Project		130,000,000
Richmond Advance Recycled Expansion (RARE)		110,000,000
Phillips 66 Refinery		50,000,000
Groundwater Projects		
Groundwater Bayside Phase 2		35,900,000
San Joaquin Banking Project		62,800,000
Total	**$**	**438,700,000**

The cost of these future projects that are required to meet future supply requirements are divided by the increase in water demand as a result of new customers, which yields the unit cost of future water supply (

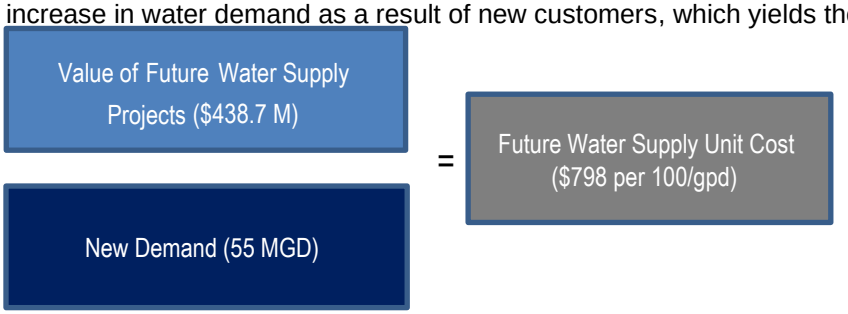

Figure 2-3). As shown in the figure, the future water supply unit cost is calculated to be $798 per 100/gpd of new demand.

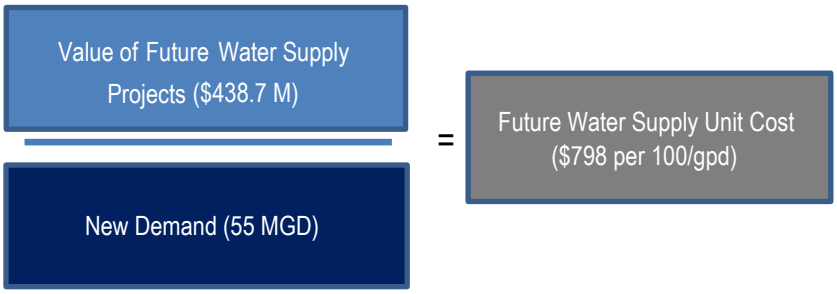

Figure 2-3: Future Water Supply Unit Cost Determination

The summation of the unit costs for the "buy-in" components and the "incremental" components (future water supply) provides the total unit cost for the determination of the SCC. Table 2-7 presents the breakdown of the updated FY 2022 unit costs for each of the individual SCC components based on the methodology outlined above. The current total unit costs are provided for comparison purposes. The Future Water Supply unit costs are applied equally to each SCC region because the additional water supplies benefit all SCC regions equally as additional water supplies can be distributed to all SCC regions as needed.

Table 2-7: Updated SCC Unit Costs for FY 2022

	Unit Costs $/100 gpd				
Region	**System-Wide Buy-In**	**Regional Buy-In**	**Future Water Supply**	**Total**	**Current Total**
Region 1	$3,575	$1,787	$798	**$6,160**	**$6,463**
Region 2	$3,575	$4,585	$798	**$8,958**	**$8,708**
Region 3	$3,575	$2,720	$798	**$7,093**	**$6,903**

3.0 WATER USE ANALYSIS

This section of the report documents the evaluation of water usage within the District's service area by customer class and examines potential changes to the structure of SCC's for assessment of the charges.

3.1 BACKGROUND

Currently, the District assesses SCCs to new customers based on an assumed average water use for single family residential, multi-family residential, and non-residential customer classes (Table 3-1 through

Table 3-3). Single family residential customers' SCCs are presently based on the average water use for a parcel serviced by a standard 5/8" or 3/4" water meter, with charges for larger meters scaled based on an industry-standard meter equivalency schedule[1] up to 1 ½". Similarly, non-residential customers' SCCs are based on the average water use for a 5/8" water meter, with charges for larger meters scaled based on the same meter equivalency schedule up to 1 ½". All non-residential customers served by larger than 1 ½" meter presently have their projected water use calculated on a case-by-case basis using water use information provided by the applicant. Multi-family residential customers' SCCs are presently based on an analysis of average water use per dwelling unit without considering dwelling unit size.

Table 3-1: Current Single Family Customer Water Use (gallons per day)

	Meter Size		
Region	3/4"	1"	1 ½"
Region 1	280	470	940
Region 2	360	600	1,200
Region 3	580	970	1,940

Table 3-2: Current Multi-Family Customer Water Use (gallons per day)

Region	Per Dwelling Unit
Region 1	163
Region 2	168
Region 3	199

Table 3-3: Current Non-Residential Customer Water Use (gallons per day)

	Meter Size			
Region	5/8"	3/4"	1"	1 ½"
Region 1	408	612	1,020	2,040
Region 2	535	806	1,350	2,700
Region 3	625	960	1,600	3,200

[1] *American Water Works Association Manual M1 Principles of Water Rates, Fees, and Charges*

3.2 APPROACH

As part of this Study, individual bill-level water use data from 2005 to 2017 were analyzed to update typical water use characteristics for each customer class, both system-wide and in each region. This analysis included nearly 57 million data points that helped to characterize customer demands over time and across customer classes and service area regions. The District's billing data was merged with land use data, meter data, and LandVision property data. This compilation of account, usage and property data allowed water use characteristics to be analyzed for each customer class with consideration of meter size, as well as alternative charge units including number of rooms per household, number of bedrooms, building square footage, dwelling size, and irrigation area. Water demands were analyzed relative to each of these parameters using a series of statistical tests to identify statistically significant relationships and representative billing units. These tests and other considerations were applied to the District's current approach to estimating usage for the basis of the SCCs as well as alternatives to arrive at the recommended basis for estimating usage within the charge, shown in Table 3-4.

Table 3-4: Existing Charge Basis, Alternatives Considered, and Recommended Basis

Current Basis for Charge	Alternative Basis for Charge Considered	Recommended Basis for Charge
Single Family • Average usage at 3/4-inch meter for each region • Scale with meter equivalencies • Fixture counts to determine appropriate meter size	**Single Family** • Meter size • Square feet • Bedrooms • Rooms	**Single Family** • Average usage observed per meter size for each region. • Fixture counts to determine appropriate meter size
Multiple Family • Average usage per dwelling unit	**Multiple Family** • Dwelling unit size • Square feet • Bedrooms • Rooms • Dwelling units	**Multiple Family** • Average usage per dwelling unit for small (<500 square foot) and standard (>500 square feet) sized units
Non-Residential • Average usage at 5/8-inch meter for each region • Scale with meter equivalencies • Fixture counts to determine appropriate meter size	**Non-Residential** • Meter size • Square feet	**Non-Residential** • Average usage observed per meter size for each region. • Fixture counts to determine appropriate meter size

Demand characteristics were primarily evaluated using a series of analysis of variance (ANOVA) tests to understand the true differentiation between customer usage characteristics relative to the potential charge parameters described above. While customer demands are often established by simply calculating the average water demand for, say, every meter size, use of the ANOVA test determines whether these differences in mean water demands at each meter size are statistically significant or simply "a matter of

chance." This is similar to the commonly used t-test but can be expanded to evaluate more than two group in an individual test. For example, testing differences in mean water usage relative to meter size using t-tests would require comparing each meter size to every other meter size in individual t-tests in a pairwise manner. Alternatively, the ANOVA test compares the mean water use for each meter size pairing in a single test to determine the statistical significance of the differences in each group's mean water usage. The ANOVA test was used to compare across potential charge parameters and across service area regions.

When analyzing water usage characteristics, it is almost universally true that water consumption is not normally distributed, meaning the distribution of consumption per account is not symmetrical around the mean. Rather, a distribution with a long tail to the right for high-volume users is observed, indicating a positive skew. While this is typical for most, if not all, water service providers, it is worth noting that the mean usage for each customer type and for each of the billing parameters evaluated is still an appropriate indicator of typical usage for purposes of the SCC. This is supported by three key factors:

- The amount of skew is similar across SCC regions, meaning no particular region of the service area is disproportionately impacted,
- The SCC is intended to account for both typical AND potential water usage of a new applicant as opposed to simply the most common usage level, which is why similar charges are often assessed based on meter capacity, and
- The use of median water usage for new applicants would under-assign water usage to new customers and lead to discrepancies between the usage per applicant and the total usage from all new applicants.

Additional consideration was given to the viability of actually charging SCCs based on the parameters listed in Table 3.4. Discussions of charge viability focused primarily on the following considerations:

- **Statistical significance** – As discussed above, testing for statistical significance in the differences in demand characteristics between customer types provided confidence that average demands for each group were in fact different and not caused by noise in the data.
- **Data reliability** – Because the analysis involved a large amount of data from various sources, consistency and reliability of the data were important considerations to provide confidence that the demands relative to potential charge parameters (e.g., number of rooms, square footage, meter size, etc.) could be accurately measured and evaluated.
- **Administrative burden** – The anticipated level of effort required to implement and assess charges based on each of the potential billing parameters was an important consideration to ensure the District could effectively and efficiently determine the SCCs to be charged to new developments.

3.3 CUSTOMER CLASS USAGE RESULTS AND RECOMMENDATIONS

Based on the results of the ANOVA testing and consideration of the factors listed above, charge parameters and water usage levels were determined for each customer class. These parameters are described below.

For single family residential customers, the current approach of assessing charges based on meter size continues to be the recommended approach. However, water use characteristics were analyzed to determine actual average water use by each meter size which would be used to determine the SCC for each SFR meter size. This recommended alternative approach replaces the existing approach of scaling the average demand for meters greater than 3/4" based on a meter equivalency schedule and uses the most up-to-date data to reflect current levels of water use for larger meter sizes. Since 2010, the standard SFR installation are based on 3/4" meter size.

For MFR SCC, the District uses the number of dwelling units to estimate the expected overall water use for the MFR structure rather than meter size because it provides a more detailed estimate of water use. The charge basis for multi-family residential accounts was updated to refine the previous per-dwelling unit approach. Based on detailed analysis of water demands for this class of customers, a statistically significant difference could be shown for multi-family accounts with an average dwelling unit size of less than 500 square feet (SF) and greater than 500 SF. This analysis included testing of a number of different approaches, including three tiers of dwelling unit size and various dwelling unit size breakpoints for each tier. Throughout this testing, the most consistent and statistically significant difference was found at the 500 SF per dwelling unit threshold. As such, typical water demands were estimated for small (less than 500 SF) and standard (greater than 500 SF) dwelling units, allowing for differentiation in the per-dwelling unit charge based on dwelling unit size. Observed MFR dwelling unit water use was relatively consistent between SCC regions, so the analysis of more detailed MFR water use by dwelling unit size combined the SCC regions. For the analysis, dwelling unit size data was derived from county records and linked to MFR water use.

For non-residential accounts, it was found that that typical water use consistently increased with meter size. Similar to the update for single family residential customers, it is recommended that the water demand basis for non-residential accounts be scaled for the SCC based on the calculated average water use per meter size in each region, rather scaling average water use for 5/8" meters based on a meter equivalency factor. It is recommended that the existing approach to allow for case-specific demand calculations for accounts with larger meter sizes of greater than 1 ½" be maintained by the District because the of the variability in water use in the larger meter sizes.

The following tables present the estimated water use based on our analysis and for application within the assessment of the SCC for each customer class.

Table 3-5: Single Family Customer Water Use (gallons per day)

	Meter Size		
Region	**3/4"**	**1”**	**1 ½"**
Region 1	190	270	345
Region 2	210	450	580
Region 3	490	750	965

Table 3-6: Multi-Family Customer Water Use (gallons per day)

	Dwelling Unit Size	
Region	**< 500 sq. ft**	**> 500 sq. ft**
Service Area Wide	95	120

Table 3-7: Non-Residential Family Customer Water Use (gallons per day)

	Meter Size			
Region	**5/8"**	**3/4"**	**1"**	**1 ½"**
Region 1	246	402	765	1,995
Region 2	334	478	856	2,430
Region 3	460	704	1,254	3,089

4.0 PROPOSED SYSTEM CAPACITY CHARGES AND COMPARISONS, REVENUE ESTIMATES

This section of the report documents the proposed system capacity charges based on the determination of the unit costs and the water use analysis and provides a comparison of benchmarked utilities.

4.1 PROPOSED SYSTEM CAPACITY CHARGES

The proposed SCCs are calculated by applying the formula shown in **Error! Reference source not found.**. The unit cost for each region was multiplied by the calculated estimated water use for each customer class and meter size or dwelling unit. Table 4-1 through Table 4-3 provide a summary of the proposed SCC schedules for single family residential, multi-family residential, and non-residential customers.

Table 4-1: Proposed Single Family Residential SCC Schedule

	Meter Size		
Region	**5/8" & 3/4"**	**1"**	**1 ½"**
Region 1	$11,705	$16,633	$21,253
Region 2	$18,811	$40,309	$51,954
Region 3	$34,754	$53,195	$68,444

Table 4-2: Proposed Multi-Family Residential SCC Schedule

	Dwelling Unit Size	
Region	**< 500 sq. ft**	**> 500 sq. ft**
Region 1	$5,852	$7,392
Region 2	$8,510	$10,749
Region 3	$6,738	$8,511

Table 4-3: Proposed Non-Residential SCC Schedule

	Meter Size			
Region	**5/8"**	**3/4"**	**1"**	**1 ½"**
Region 1	$15,151	$24,763	$47,118	$122,871
Region 2	$29,960	$42,831	$76,663	$217,654
Region 3	$32,619	$49,935	$88,960	$219,086

Table 4-4 summarizes the current and proposed SCCs by customer class. The table demonstrates that the proposed SCCs for all customer classes are lower than the charges currently assessed by the District. For SFR, MFR and non-residential applicants, the proposed SCC will be reduced nearly all customers from as little as 5% to over 50% depending on the customer class and meter size, except for the nonresidential 1½" meter size, which will remain about the same as the current SCC.

Table 4-4: Comparison of Current and Proposed SCCs

Customer Type	Region	Current SCC	Proposed SCC
SFR 3/4”	Region 1	$18,100	$11,705
	Region 2	$31,350	$18,811
	Region 3	$40,040	$34,754
SFR 1”	Region 1	$30,230	$16,633
	Region 2	$52,350	$40,309
	Region 3	$66,870	$53,195
SFR 1 ½”	Region 1	$60,460	$21,253
	Region 2	$104,700	$51,954
	Region 3	$133,740	$68,444
Non-Residential 5/8”	Region 1	$25,850	$15,151
	Region 2	$46,590	$29,960
	Region 3	$43,140	$32,619
Non-Residential 3/4”	Region 1	$38,780	$24,763
	Region 2	$69,890	$42,831
	Region 3	$64,710	$49,935
Non-Residential 1”	Region 1	$64,760	$47,118
	Region 2	$116,720	$76,663
	Region 3	$108,070	$88,960
Non-Residential 1 ½”	Region 1	$129,520	$122,871
	Region 2	$233,440	$217,654
	Region 3	$216,140	$219,086
MFR per unit (<500 sqft)	Region 1	$10,530	$5,852
	Region 2	$14,630	$8,510
	Region 3	$13,740	$6,738
MFR per unit (>500 sqft)	Region 1	$10,530	$7,392
	Region 2	$14,630	$10,749
	Region 3	$13,740	$8,511

While there is some variation in the unit costs by region, the primary reason for the recent and future decreases are due to the significant water use reductions, reflecting the trend of more water conservation. Like most utilities around the United States, the District has and continues to experience a reduction in per account usage due to factors such as more efficient water fixtures, economic conditions, and conservation. Table 4-5 presents a comparison of the currently-applied water use estimates and those developed in the Study.

Table 4-5: Comparison of Existing and Proposed Water Use

Customer Type	Region	Current Estimated Water Use (gpd)	Calculated Water Use (gpd)
SFR 3/4"	Region 1	280	190
	Region 2	360	210
	Region 3	580	490
SFR 1"	Region 1	470	270
	Region 2	600	450
	Region 3	970	750
SFR 1 ½"	Region 1	940	345
	Region 2	1,200	580
	Region 3	1,940	965
Non-Residential 5/8"	Region 1	408	246
	Region 2	535	334
	Region 3	625	460
Non-Residential 3/4"	Region 1	612	402
	Region 2	806	478
	Region 3	960	704
Non-Residential 1"	Region 1	1,020	765
	Region 2	1,350	856
	Region 3	1,600	1,254
Non-Residential 1 ½"	Region 1	2,040	1,995
	Region 2	2,700	2,430
	Region 3	3,200	3,089
MFR per unit (<500 sqft)	Region 1	163	95
	Region 2	168	95
	Region 3	199	95
MFR per unit (>500 sqft)	Region 1	163	120
	Region 2	168	120
	Region 3	199	120

4.2 SYSTEM CAPACITY CHARGES FOR LARGER METERS

The SCC for service connections with meters larger than 1½ inches (except for MFR which is calculated based on dwelling unit) should be determined on a case-by-case basis by the District based on water use information furnished by the applicant and applying the same unit charge basis that is applied to calculate the SCC for smaller meters shown in Table 2-7. The SCC is then determined by multiplying the total unit cost for the connection's region by the estimated water demand in units of 100 gpd, rounded to three significant units.

The District should make certain that during these individual calculations that the SCC for a meter larger than 1½ inches should never be less than the amount charged for a 1½ inch meter in the same region, consistent with the District's current practice to ensure applicants with meters larger than 1 ½" pay at least as much as customers with 1 ½' meters.

4.3 SCC FOR ACCESSORY DWELLING UNITS

Since the enactment of new state laws regarding the development of ADUs and JADUs in recent years, the District has seen growth in construction of ADUs in the service area. State laws limit the District from charging an SCC and WCF for an ADU when the ADU meets certain statutory requirements under California Government Code Section 65852.2.

ADUs and JADUs are attached or detached units for residential purposes which are constructed as part of a single-family premises or multi-family premises as defined by California Government Code Sections 65852.2 and 65852.22. Under certain conditions described in California Government Code Section 65852.2, ADUs constructed within an existing or proposed SFR structure or other existing accessory structure are exempted from capacity charges. The current District practice is to not charge an SCC to these applicants. The District should ensure that its SCC procedures do not charge an SCC to ADUs and JADUs that meet the capacity charge exemption requirements.

For ADUs and JADUs that do not qualify for this capacity charge exemption, a capacity charge that does not exceed the estimated reasonable cost of providing the service and is of proportional benefit to the person or property being charged may be assessed, based upon either drainage fixture units (DFU) or square footage of the unit. For SFR applicants with ADUs and JADUs that do not meet the exemption requirements, the District assesses the SCC based on the meter size that is calculated from the fixture unit count of the SFR structure and the drainage fixture unit count of the ADU and JADU. For MFR applicants with ADUs and JADUs that do not meet the exemption requirements, the ADU or JADU square footage is added to the MFR dwelling unit square footage to determine the assessed MFR SCC (over 500 square feet charge or 500 square feet and under charge).

4.4 CAPACITY CHARGE SURVEY

Figure 4-1 shows the current capacity charges for nearby water agencies compared to the District's SCC. Cities often consider the impact of capacity charges on their development plans and may minimize the allocation of costs to new customers resulting in lower connection charges when compared to special districts. Cities expect new development to generate benefits in increased local economic activity, taxes, and other ancillary financial benefits. As a special district, the District does not receive these types of benefits and must recover the full value of the investments in the water system made by its ratepayers. Any reduction in the revenue collected from the SCC would have to be replaced by increased water rates and/or reduced investment in future capital facilities (which would hamper the District's ability to meet future demand). Other factors that affect capacity charges include the complexity of the water system, age and condition of facilities, and amount of new capacity required to serve new customers. In addition, some agencies do not include the water supply costs in their capacity charges because they are supplied by a wholesaler.

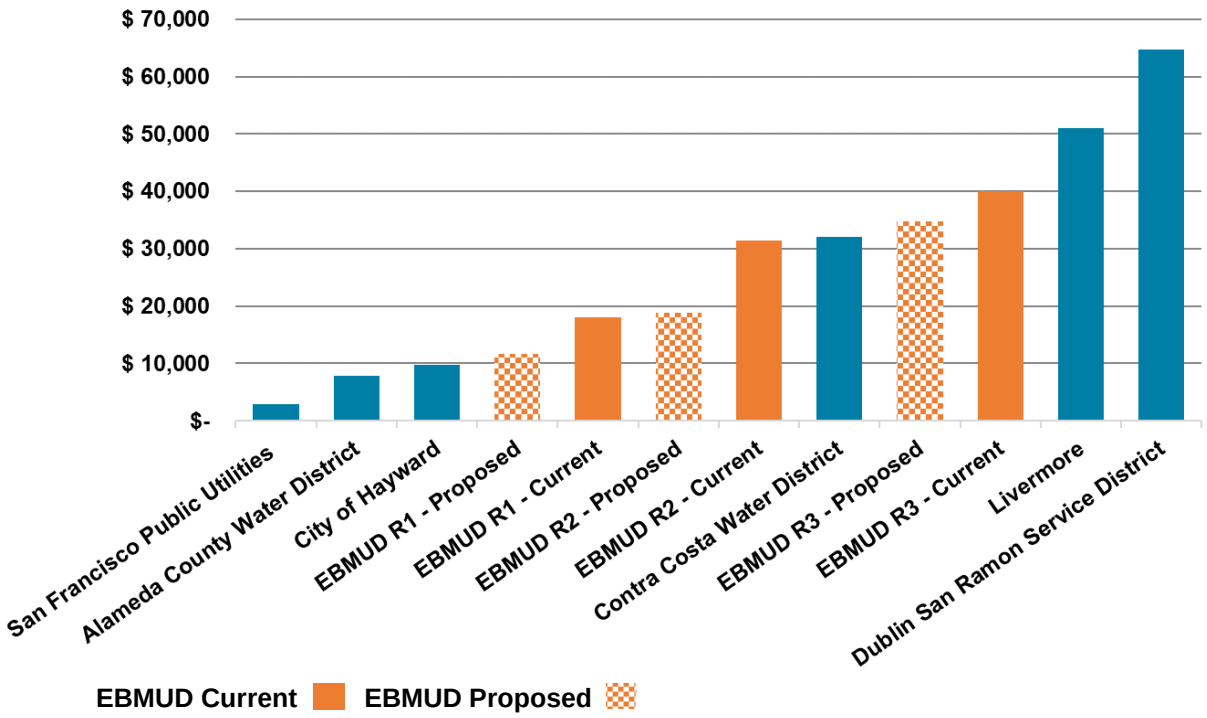

Figure 4-1: Survey of Single Family Capacity Charges for Customers with 3/4" Meters[2]

[2] -SFPUC has higher retail water rates than all other utilities surveyed.
-City of Hayward's Connection Fee does not include a water supply component and they have relatively high retail water rates.
-Alameda County Water District and Contra Costa Water District have less complex systems than EBMUD.
-Dublin San Ramon Service District and Livermore both include Zone 7 charges.

4.5 PROJECTED IMPACT OF SCC UPDATE ON SCC REVENUE

Beginning in FY 2016, the service area has seen a high level of new development, especially in the urban core. Most of the growth has been in large MFR projects. The District experienced a reduction in new connections in FY 2020, which also coincides with the COVID-19 pandemic. It is unclear what the long-term impact of the pandemic will have on development, but a slowdown had been expected even prior to the pandemic. District staff estimate that the proposed updates to the SCC methodology will reduce the current SCC by approximately 30 percent and would have a corresponding reduction in SCC revenues collected depending on the development pattern. The District's projection for SCC revenue for FY 2022 was $40 million under the current SCC. If the District implements the proposed SCC changes, the projected SCC revenue for the same level of development would be approximately $28 million over the same period.

EXHIBIT E

East Bay
Municipal Utility District
Wastewater Cost of Service & Capacity Fee Study

Final Report / May 6, 2019

RAFTELIS

WOODARD &CURRAN

EBMUD

RAFTELIS

May 6, 2019

Ms. Eileen White
Director of Wastewater
East Bay Municipal Utility District
375 11th Street
Oakland, CA 94607

Subject: Wastewater Cost of Service Rate Study & Capacity Fee Study Report

Dear Ms. White:

Raftelis Financial Consultants, Inc. (Raftelis) is pleased to provide this report summarizing the Wastewater Cost of Service Study (COS Study) & Wastewater Capacity Fee Study (WCF Study) for the East Bay Municipal Utility District (District) to establish wastewater rates, charges, and capacity fees that are consistent with applicable law.

The major objectives of the Cost of Service Study include the following:

- Review the District's current wastewater rate structures.
- Conduct a cost of service analysis for wastewater rates and charges subject to Proposition 218.
- Review and update the detailed cost allocations for the unit processes at the Main Wastewater Treatment Plant (MWWTP).
- Evaluate alternative methods of measuring wastewater strength and recommend a method.
- Review domestic strength concentration to reflect reduced flows at plant.
- Review allocation of wet weather costs to reflect the costs of I&I into the plant.
- Develop fair and equitable wastewater user charges.
- Validate cost of service methodology and calculation of wastewater charges.
- Demonstrate the impacts of the proposed wastewater user charges on typical customer bills.

The major objectives of the Wastewater Capacity Fee Study include the following:

- Review the existing Wastewater Capacity Fee (WCF) and update as needed.
- Increase transparency and simplify the administration of the WCF.

The Report summarizes the key findings and recommendations related to the development of the Wastewater Cost of Service Study and the Wastewater Capacity Fee Study.

It has been a pleasure working with you, and we thank you and the District staff for the support provided during the course of these studies.

Sincerely,

Sanjay Gaur
Vice President

Hannah Phan
Manager

Lauren Demine
Consultant

445 S. Figueroa St., Suite 2270
Los Angeles, CA 90071
www.raftelis.com

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Glossary

Ad Valorem Bond Levy	A tax based on the assessed value of real estate with the proceeds designated to pay for municipal bonds
American Water Works Association (AWWA)	American Water Works Association is the largest nonprofit, scientific and educational association dedicated to managing and treating water
BCC	Business Classification Code. EBMUD classification system of non-residential customers based on the type of business operated, and on the 1972 Standard Industrial Classification Manual
Capacity Charges	A fee assessed for new connections to the wastewater system to recover the appropriate share of the cost of capital improvements to serve new and expanded connections
Capital Expenses	Expenditures for capital assets
CCF	Centum Cubic Feet. Volume equal to 100 cubic feet or 748 gallons.
Chemical Oxygen Demand (COD)	Measurement of the amount of organic compounds in wastewater that can be oxidized chemically, typically expressed in milligrams per liter (mg/l)
Chemical Oxygen Demand Filtered (CODf)	Measurement of the amount of organic compounds in wastewater expressed in milligrams per liter (mg/l). CODf is the fraction of total COD measured from a wastewater sample filtered through a 1.5 micron filter..
Commodity Charge	Charge for per unit of water (ccf) consumed
COS	Cost of Service
Debt Service	The principal and interest payments on debt issued
Depreciation	A reduction in the value of an asset with the passage of time.
Domestic Strength - Wastewater	Concentration of COD/CODf and TSS assigned to domestic strength discharges
EBMUD	East Bay Municipal Utility District
Effluent	Outflow from a wastewater treatment plant
Fixed Charge	Portion of the customer monthly charge that does not vary with water use. For wastewater charges, sometimes referred to as the service charge.
Flow - Wastewater	Volume (ccf) for a given billing period that is used to calculate the wastewater charge
Headworks	"Head of the works" of a wastewater treatment plant, which serves as the first step in treatment and incorporates a system of screens, filters, detritors, and classifiers to remove large solids, grit, and other debris from the influent wastewater.
Infiltration	Water other than wastewater that enters a sewer system during wet weather conditions from the ground through such means as defective pipes, pipe joints, connections or Maintenance Holes.
Inflow	Water other than wastewater that enters a sewer system during wet weather conditions from illicit or unpermitted sources other than Infiltration, such as, but not limited to, roof leaders, foundation drains, yard drains, area drains, drains from springs and swampy areas, Maintenance Hole covers, cross connections between storm sewers and sanitary sewers, catch basins, cooling towers, storm water, surface runoff, street wash waters, or drainage.

Infiltration and Inflow (I&I)	All water from both Infiltration and Inflow without distinguishing the source.
Influent	Inflow to a wastewater treatment plant.
Loadings - Wastewater	Amount of wastewater flow and strength in the influent
MWWTP	Main Wastewater Treatment Plant
Million Gallons Per Day (MGD)	Equal to 1 million gallons over the period of one day
MFR	Multi-Family Residential. Customer Class for multi-dwelling residential buildings (up to 4 dwelling units per building) without individual water meters. Multi-dwelling residential units with 5 or more dwelling units per building without individual meters are considered non-residential for wastewater billing purposes.
Non-Residential - Wastewater	Customers who are not in the Single Family or Multi-Family customer classes for wastewater billing purposes
Operations and Maintenance (O&M) Expenses	Expenditures for daily operations and maintenance of the wastewater system
Plant Balance	An estimation of the wastewater flow and wastewater strength from all types of wastewater customers that is then aggregated and checked (balanced) against the total flow and strength measured at the plant.
Proposition 218	Constitutional amendment passed in 1996 that creates procedural and substantive limitations for adopting new or increased property related fees, charges, or assessments, and reinforces voter approval requirements for new, increased, or extended taxes.
Proposition 26	Constitutional amendment passed in 2010 that exempts certain fees and charges from the definition of a "tax" for purposes of voter approval, including fees or charges for services or products provided by a local government.
Rate Revenue Requirement	The portion of annual operating, maintenance and capital-related expenses that must be recovered from annual wastewater rates and charges
RCLD	Replacement Cost Less Depreciation
Reserves	District cash that is not part of current year revenues
Residential - Wastewater	Customers in the single-family residential or multi-family residential customer class for the purpose of wastewater billing
Resource Recovery (R2)	Trucked waste program
Revenue Offsets	Non-wastewater revenue that is used to pay a portion of the annual operating, maintenance and capital related expenses
Revenue Requirement	The annual revenue needed to fund operating, maintenance, and capital-related expenses that are required to provide wastewater service
Raftelis	Raftelis Financial Consultants
Service Charge - Wastewater	Fixed monthly wastewater charge
Sewer Lateral	Pipe or pipes and appurtenance that carry sewage and liquid waste from any building or facility that is required to be provided with public sewer service, or that is actually provided with public sewer service, to the sanitary sewer main
SFR	Single Family Residential. Residential customers with one dwelling unit with an individual water meter

Strength - Wastewater	COD/CODf and TSS component of a wastewater customer's discharge
Test Year	A full year of actual functionalized expense data available at the time the study commenced and a representative year for the District.
Total Suspended Solids (TSS)	Measurement of solid materials, including organic and inorganic, that are suspended in wastewater, typically expressed in mg/l
WEF	Water Environment Federation. The Water Environment Federation provides technical education and training for water quality professionals who clean water and return it safely to the environment
WCF	Wastewater Capacity Fee
Wet Weather Facilities Charge	Wastewater charge collected on the property tax bill to fund the capital facilities designed to meet peak wet weather flows that are in excess of normal wastewater discharge
W&C	Woodard & Curran

1. Executive Summary

1.1. Introduction

In June 2018, East Bay Municipal Utility District (District) engaged Raftelis Financial Consultants, Inc. (Raftelis) to conduct two studies: (1) a cost of service (COS) study for the District's wastewater rates and charges subject to Proposition 218; and (2) and a capacity fee study of the District's Wastewater Capacity Fee (WCF), which is not subject to Proposition 218, but is governed by other laws including Government Code Section 66013.

This report documents the resultant findings, analyses, and proposed changes to the wastewater rates, charges and capacity fees from these studies in two Parts:

- Part I of this report summarizes the COS Study. The purpose of the COS Study is to evaluate and update wastewater rates and charges to reflect increased costs and/or new or changed conditions, in accordance with the requirements of Proposition 218.
- Part II of this report summarizes the WCF Study. The purpose of the WCF Study is to review and update the Wastewater Capacity Fee in accordance with the rules and regulations of California State Assembly Bill 1600 (AB 1600) applicable to capacity fees and connection fees and, specifically, Government Code Section 66013.

This report is formal technical documentation in support of modifications to the wastewater rates and capacity fees.

1.2. Part I: Wastewater Cost of Service Study

1.2.1. INTRODUCTION

The District's wastewater charges have defined three customer classes: single-family residential (SFR), multi-family residential (MFR), and non-residential. Non-residential customers are further classified based on the type of business operated and assigned into Business Classification Codes (BCC) based on common characteristics of wastewater contributed to the system, including flow and strength. 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.

As described in this report, the rates for the wastewater fees have five components: a Service Charge, a Flow Charge, a Strength Charge, a San Francisco (SF) Bay Pollution Prevention Fee, and a Wet Weather Facilities Charge.

1.2.2. LEGAL FRAMEWORK FOR COST OF SERVICE STUDY

In November 1996, California voters approved Proposition 218, which amended the California Constitution by adding Article XIII C and Article XIII D. Article XIII D placed substantive limitations on the use of the revenue collected from property-related fees and on the amount of the fee that may be imposed on each parcel. Additionally, it established procedural requirements for imposing new, or increasing existing, property-related fees. The California Supreme Court has determined that water and wastewater service fees are property-related fees subject to Proposition 218. The COS Study evaluated and updated the wastewater rates and charges in accordance with the requirements of Proposition 218, as summarized in Sections 2.2 herein.

1.2.3. COST OF SERVICE PROCESS AND METHODOLOGY

For the wastewater COS analysis, Raftelis followed the guidelines for allocating costs detailed in the Water Environment Federation (WEF) Manual of Practice No. 27, Financing and Charges for Wastewater Systems, 2004. The wastewater COS analysis consists of six major steps, as outlined below:

1. Conduct a plant balance analysis to estimate the flows and strength characteristics of each customer class.
2. Functionalize Operations and Maintenance (O&M) expenses and capital costs into functional categories such as Treatment, Billing and Customer Service.
3. Allocate each functional category into cost components such as Infiltration and Inflow (I&I), Flow, Strength, Billing and Customer Service.
4. Develop customer class characteristics by cost component.
5. Calculate the cost component unit rates by dividing the total cost in each cost component in Step 3 by the customer class characteristics in Step 4.
6. Calculate the cost for each customer class by multiplying the unit cost in Step 5 by the customer class characteristics in Step 4.

The COS analyses were performed using the data from the District for fiscal year 2017 (FY 2017)[1], henceforth referred to as the Test Year. This was a full year of actual functionalized expense data available at the time the COS Study commenced and was a representative year for the District. Required adjustments were made to Test Year rates and charges based on the District FY 2017 actuals for development of updated FY 2017 rates and charges presented here. The results of the COS analyses were used for the new revenue requirements for FY 2020 and FY 2021 to calculate the proposed FY 2020 and FY 2021 rates and charges.

1.2.4. COST OF SERVICE ANALYSIS

To calculate fair and equitable rates so that users pay in proportion to the cost of providing service, Raftelis allocated the total revenue requirements to wastewater flow, chemical oxygen demand (COD), and total suspended solids (TSS) consistent with the previously identified WEF/industry guidelines. Since wastewater flow or volumes are not directly measured for each customer, District staff estimated the wastewater flows and loadings (flow, COD, and TSS) for each customer class through a plant balance analysis, which is used to estimate and validate the wastewater loadings (flow, COD, and TSS) generated by each customer class. Unit costs are calculated for flow, COD, and TSS and cost responsibility is assigned to various customer classes in proportion to their loadings. Costs to serve different customer classes are determined; rates are then designed to proportionately recover the costs in compliance with Proposition 218 requirements, which are described in more detail in Section 2.2.1.

1.2.5. OBJECTIVES OF THE COST OF SERVICE STUDY

In reviewing the District's existing rates and charges, Raftelis discussed a number of considerations with staff and the following items were identified as primary objectives of the cost of service study.

1. Review the District's current wastewater rate structures.
2. Conduct a cost of service analysis for wastewater rates and charges subject to Proposition 218.
3. Review and update the detailed cost allocations for the unit processes at the Main Wastewater Treatment Plant (MWWTP).

[1] The District's fiscal year begins on July 1st and ends on June 30th. "FY 2017" refers to the 12-months ending June 30, 2017.

4. Evaluate alternative methods of measuring wastewater strength and recommend a method.
5. Review domestic strength concentration to reflect reduced flows at plant.
6. Review allocation of wet weather costs to reflect the costs of I&I into the plant.
7. Develop fair and equitable wastewater user charges.
8. Validate cost of service methodology and calculation of wastewater charges.
9. Demonstrate the impacts of the proposed wastewater user charges on typical customer bills.

1.2.6. COST OF SERVICE RESULTS

Through the COS analysis process described in Section 1.2.3 above, the significant outcomes of the wastewater COS analysis are as follows:

1. The detailed cost allocations for the unit processes at the MWWTP were reviewed and updated by Woodard & Curran (W&C) to ensure that they were accurate. This update resulted in very minor changes.
2. The District changed the wastewater strength measure from Chemical Oxygen Demand filtered (CODf) to Chemical Oxygen Demand (COD). CODf was originally used for industrial high strength customers; however, the majority of these customers have left the District's service area. A survey of major wastewater agencies determined that most use COD as their strength measurement. The decision to switch to COD makes the District more consistent with other larger agencies and allows for easier rate comparisons with neighboring communities.
3. Sampling results indicated that residential strengths are lower than those assumed in the 2015 COS Study. Lower influent strength measured at the MWWTP also confirmed lower strength for residential customers and non-residential customers. However, the decrease in the residential strengths were larger than those for non-residential which resulted in a shift in the proportion of costs from residential to non-residential users causing non-residential flow and strength charges to increase.
4. Adjustments were made to the Wet Weather Facilities Charge to more accurately reflect the costs of the program. The COS analysis indicated a small increase in the I&I costs relative to the treatment flow and strength for the Test Year.

1.2.7. PROPOSED WASTEWATER RATES

Based on our review, Raftelis recommends that the District retain its current wastewater user charge structure. This structure includes monthly fixed service and strength charges, a flow charge per ccf based on water usage with a maximum of nine (9) hundred cubic feet (ccf) per month for residential customers. A maximum charge of nine (9) ccf per month is used because an analysis of the District's billing records shows that about 97 percent of all residential customers' winter water use is at or below this amount. As such, this amount provides a reasonable estimate of wastewater discharge.

Residential customers consist of SFR and MFR up to a fourplex. The current rate structure is familiar to customers and encourages conservation while providing revenue stability to the District.

Under the current rate structure, non-residential customers are assessed a monthly fixed service charge and a flow charge per ccf based on their BCC.

Table 1-1 and Table 1-2 show the proposed wastewater rates for residential and non-residential customers, respectively, with the COS adjustments for FY 2017 and proposed rates for FY 2020 and FY 2021.

Table 1-1: Proposed Updated FY 2017 and Proposed FY 2020 & FY 2021 Wastewater User Charges – Residential (Single Family and Multi-Family up to a fourplex)

	FY 2017	FY 2020	FY 2021
Service Charge (per account)	$6.12	$7.02	$7.30
Strength Charge (per dwelling unit)	$6.37	$7.31	$7.60
Minimum monthly charge per household	$12.49	$14.33	$14.90
Plus: A flow charge per ccf (maximum of 9 ccf)	$1.11	$1.27	$1.32
Minimum monthly charge at 0 units	$0.00	$0.00	$0.00
Maximum monthly charge at 9 units	$9.99	$11.43	$11.88
Total Residential Charge			
Minimum monthly charge	$12.49	$14.33	$14.90
Maximum monthly charge	$22.48	$25.76	$26.78
Average monthly charge at 6 ccf	$19.15	$21.95	$22.82

Table 1-2: Proposed Updated FY 2017 and Proposed FY 2020 & FY 2021 Wastewater User Charges – Non-Residential

	FY 2017	FY 2020	FY 2021
Monthly Service Charge (per meter)	$6.12	$7.02	$7.30
Treatment charge including flow processing (per ccf of sewage discharge)			
BUSINESS CLASSIFICATION CODE (BCC)			
Meat Products	$7.74	$8.90	$9.24
Slaughterhouses	$7.41	$8.50	$8.83
Dairy Product Processing	$6.07	$6.98	$7.25
Fruit and Vegetable Canning	$4.89	$5.61	$5.83
Grain Mills	$4.87	$5.58	$5.80
Bakeries (including Pastries)	$8.41	$9.65	$10.03
Sugar Processing	$4.81	$5.53	$5.74
Rendering Tallow	$14.61	$16.74	$17.40
Beverage Manufacturing & Bottling	$3.65	$4.19	$4.36
Specialty Foods Manufacturing	$15.70	$18.05	$18.75
Pulp and Paper Products	$4.18	$4.79	$4.98
Inorganic Chemicals Mfgr.	$5.38	$6.16	$6.40
Synthetic Material Manufacturing	$1.26	$1.44	$1.50
Drug Manufacturing	$2.71	$3.11	$3.23
Cleaning and Sanitation Products	$5.48	$6.30	$6.54
Paint Manufacturing	$10.57	$12.14	$12.61
Ink and Pigment Manufacturing	$3.82	$4.39	$4.56
Leather Tanning and Finishing	$14.60	$16.77	$17.43
Earthenware Manufacturing	$2.97	$3.40	$3.53
Primary Metals Manufacturing	$2.35	$2.69	$2.80
Metal Products Fabricating	$1.38	$1.57	$1.64
Drum and Barrel Manufacturing	$14.86	$17.08	$17.74
Metal Coating	$1.49	$1.71	$1.77
Air Transportation	$1.96	$2.25	$2.34
Food Service Establishments	$5.09	$5.83	$6.06
Apartment Buildings (5 or more units)	$2.47	$2.83	$2.94
Hotels, Motels with Food Service	$3.66	$4.19	$4.36
Commercial Laundries	$3.29	$3.77	$3.92
Coin Operated Laundromats	$2.47	$2.83	$2.94
Industrial Laundries	$9.34	$10.73	$11.15
Laboratories	$1.77	$2.02	$2.11
Automobile Washing and Polishing	$2.34	$2.68	$2.79
Hospitals	$2.25	$2.57	$2.68
Schools	$1.66	$1.89	$1.97
All Other BCC (includes dischargers of only segregated domestic wastes from sanitary conveniences)	$2.47	$2.83	$2.94

In addition to the fixed and flow charges described above, the District imposes the Wet Weather Facilities Charge (WWFC). The WWFC funds capital expenses for the I&I facilities (wet weather facilities, interceptors, pumping stations and storage basins) that are required to handle the wet weather flows that enter the wastewater system through the local wastewater collection systems and sewer connections. Under the Consent Decree entered into

amongst the District, certain state and federal water quality regulatory agencies, and seven local public entities which own and operate wastewater collection systems in the District's wastewater service area, which became effective on September 22, 2014, the District and the participating agencies are required to demonstrate by 2036 that sufficient rehabilitation work has been performed on the East Bay regional wastewater collection and transmission system to eliminate discharges from the District's Wet Weather Facilities except during storm events of exceptional magnitude. The Consent Decree requires the District and the participating agencies to meet certain pre-established interim benchmark percentage reductions for Wet Weather Facilities discharges.

The District's goal in entering into the Consent Decree was to achieve a plan that serves the interests of the District and its ratepayers by adequately reducing wet weather flows while ensuring any necessary financial investments are apportioned and scheduled in the most cost-effective and equitable manner possible. The District's investment in its I&I facilities are an important component of its ability to address wet weather flows and meet the requirements of the Consent Decree. The costs of the I&I facilities are recovered through the District's WWFC.

The volume of wet weather flows that enter the wastewater system from each property is proportional to the size of the collection system needed to serve each property. Properties with larger lots require more linear feet of collection system which presents more opportunity for storm water and ground water to enter through defects in the collection system. The volume of wet weather flows in the collection system has no direct relationship to a customer's monthly water use or if the wastewater discharge is from a residential or non-residential customer. For these reasons, lot size rather than water service use is used as basis of the WWFC. The structure of the WWFC is based on the rationale that larger lots contribute proportionally more to the wet weather flows than smaller lots. 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.

The wet weather capital facilities are designed to handle 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 four percent (4%) FY 2020 wastewater rate increase, the WWFC will increase 7.2 percent (7.2%) in FY 2020 when compared to the FY 2019 charge. The proposed increase for FY 2021 is four percent (4%).

Table 1-3 shows the proposed updated FY 2017 and proposed FY 2020 and FY 2021 Wet Weather Facilities Charge, based on median lot size for each lot size bin.

Table 1-3: Proposed Updated FY 2017 and Proposed FY 2020 & FY 2021 Wet Weather Facilities Charge

Lot Size (sq ft)	FY 2017	FY 2020	FY 2021
0 – 5,000	$97.00	$111.24	$115.70
5,001 – 10,000	$151.56	$173.78	$180.74
>10,001	$346.39	$397.20	$413.10

1.2.8. CUSTOMER IMPACTS

Table 1-4 shows the bill impacts for different customers with typical water usage with the proposed updated FY 2017 rates.

Table 1-4: Typical Customers' Wastewater Bill Impacts for FY 2017

Customer Class	Monthly Flow (ccf)	FY 2017 Current Bill	FY 2017 Proposed Bill	Difference ($)	Difference (%)
SFR	6	$19.73	$19.15	($0.58)	-2.9%
MFR – Fourplex	25	$63.36	$59.35	($4.01)	-6.3%
Commercial – Office	50	$129.55	$129.62	$0.07	0.1%
Commercial – Restaurant	50	$253.05	$260.62	$7.57	3.0%
Industrial – Food Manufacturing	500	$7,255.55	$7,856.12	$600.57	8.3%

Note: Bill does not include SF Pollution Prevention Fee

Table 1-5 shows the bill impacts for different customers with typical water usage with the proposed FY 2020 rates compared to the current FY 2019 rates.

Table 1-5: Typical Customers' Wastewater Bill Impacts for FY 2020

Customer Class	Monthly Flow (ccf)	FY 2019 Current Bill	FY 2020 Proposed Bill	Difference ($)	Difference (%)
SFR	6	$21.75	$21.95	$0.20	0.9%
MFR – Fourplex	25	$69.84	$68.01	($1.83)	-2.6%
Commercial – Office	50	$142.62	$148.52	$5.90	4.1%
Commercial – Restaurant	50	$279.62	$298.52	$18.90	6.8%
Industrial – Food Manufacturing	500	$8,001.12	$9,032.02	$1,030.90	12.9%

Note: Bill does not include SF Pollution Prevention Fee

Table 1-6 shows the bill impacts for different customers with typical water usage with the proposed FY 2021 rates compared to the proposed FY 2020 rates.

Table 1-6: Typical Customers' Wastewater Bill Impacts for FY 2021

Customer Class	Monthly Flow (ccf)	FY 2020 Proposed Bill	FY 2021 Proposed Bill	Difference ($)	Difference (%)
SFR	6	$21.95	$22.82	$0.87	4.0%
MFR – Fourplex	25	$68.01	$70.70	$2.69	4.0%
Commercial – Office	50	$148.52	$154.30	$5.78	3.9%
Commercial – Restaurant	50	$298.52	$310.30	$11.78	3.9%
Industrial – Food Manufacturing	500	$9,032.02	$9,382.30	$350.28	3.9%

Note: Bill does not include SF Pollution Prevention Fee

1.3. Part II: Wastewater Capacity Fee Study

1.3.1. INTRODUCTION

The District levies WCFs on new developments that connect to and existing users that expand their use of the wastewater system. The WCF is based on the cost of facilities required to provide capacity for new development. The wastewater system capacity is expressed in terms of wastewater flow volume (Flow) and strength factors for COD and TSS.

The WCF is designed to recover the reasonable cost of the capital facilities necessary to provide wastewater treatment capacity to new and expanded development. When a property is developed or redeveloped within the District's service area, the District imposes a capacity fee. The customer's need for an increase in system capacity can be the result of a new connection to the system or a significant change in use on an existing connection that

results in an increase in Flow and/or wastewater discharge strength. The objective of a capacity fee is to assess against the benefitting party, their proportionate share of the cost of infrastructure required to provide them service.

1.3.2. LEGAL FRAMEWORK FOR CAPACITY FEES

Capacity fees are not subject to Proposition 218. However, the District's authority to impose the WCF is limited by other statutory and constitutional provisions. Government Code Section 66013 contains requirements specific to wastewater capacity fees. In addition, procedural requirements for adopting or protesting capacity fees, pursuant to Section 66013, are contained in Sections 66016, 66022, and 66023 of the Government Code. The most pertinent part of Section 66013 states:

> "Notwithstanding any other provision of law, when a local agency imposes fees for water connections or sewer connections, or imposes capacity charges, those fees or charges ***shall not exceed the estimated reasonable cost of providing the service*** for which the fee or charge is imposed…" (emphasis added)

The WCF is also subject to the requirements set forth by Proposition 26, which amended Section 1 of Article XIIIC, and requires the District to show the amount charged is not a tax by not exceeding the reasonable amount required to provide the service, as stated in Section 1(e)(2):

> "A charge imposed for a specific government service or product provided directly to the payor that is not provided to those not charged, and which does not exceed the reasonable costs to the local government of providing the service or product."

The District's WCF is structured to meet the requirements of these laws, and to recover the reasonable cost of the facilities necessary to provide capacity for new, or significant changes to existing, sewer connections.

1.3.3. WASTEWATER CAPACITY FEES

The existing WCF were last updated in 2013 and were based on the Buy-In methodology. The Buy-In methodology requires new or upsized connections to pay their proportional share of the capital facilities and infrastructure built out and necessary to provide them service. The fee has been updated over the past five years to account for the effects of inflation but has not been updated to account for increased system value.

The wastewater system was built to accommodate build-out demand and, therefore, has surplus capacity to serve the remaining or anticipated growth without major upgrades or improvements. Based on this information, it is reasonable and appropriate to determine capacity fees based on the Buy-In method. Raftelis worked closely with the District to determine the value of the existing system inclusive of R2 assets and of select capital reserves. The value of the system was then spread over the wastewater system capacity in terms of wastewater flow volume (Flow) and strength factors for COD and TSS to determine the proposed capacity fee.

The analysis herein uses the Buy-In method to substantiate the proposed updated SFR WCF of $2,671 for FY 2019. The proposed FY 2020 SFR WCF is $2,752, rounded to $2,750 for the published charge.

Additionally, Raftelis evaluated several approaches for streamlining the process of determining non-residential WCF's. The approach chosen is more straightforward and is similar to the approach used to determine the applicable Water System Capacity Charge (SCC) for new or upsized connections. In conjunction with adopting updated capacity fees, Raftelis recommends that the District should adjust the capacity fees each year to keep pace with inflation by applying the Engineering News Record Construction Cost Index (ENR CCI).

2. Part I: Cost of Service Study Overview

2.1. Introduction

The District's wastewater service area covers an 88-square-mile area of Alameda and Contra Costa counties along the Bay's east shore, extending from Richmond in the north to Oakland in the south. It serves approximately 685,000 customers. Approximately 69 MGD of wastewater is treated on average at the Main Wastewater Treatment Plant (MWWTP). The wastewater utility is also responsible for the operation and maintenance of 15 wastewater pumping stations, 29 miles of concrete interceptor sewers, 8 miles of force mains, and three wet weather facilities. Each of the cities within the District's wastewater service area operates a sewer collection system that discharges into the District's intercepting sewers.

The major objectives of the COS Study include the following:

- Review current wastewater rate structures.
- Conduct a cost of service analysis for wastewater rates and charges subject to Proposition 218.
- Review and update the detailed cost allocations for the unit processes at the (MWWTP).
- Evaluate alternative methods of measuring wastewater strength and recommend a method.
- Review domestic strength concentration to reflect reduced flows at plant.
- Review allocation of wet weather costs to reflect the costs of I&I into the plant.
- Develop fair and equitable wastewater user charges.
- Validate cost of service methodology and calculation of wastewater charges.
- Demonstrate the impacts of the proposed wastewater user charges on typical customer bills.

Part I of this report provides an overview of the COS Study and includes findings and recommendations for wastewater user charges.

2.2. Legal Framework and Rate Setting Methodology

2.2.1. LEGAL FRAMEWORK[2] - COST OF SERVICE STUDY

In November 1996, California voters approved Proposition 218, which amended the California Constitution by adding Article XIII C and Article XIII D. Article XIII D placed substantive limitations on the use of the revenue collected from property-related fees and on the amount of the fee that may be imposed on each parcel. Additionally, it established procedural requirements for imposing new, or increasing existing, property-related fees. The California Supreme Court has determined that wastewater service fees are property-related fees subject to Proposition 218.

In accordance with these provisions, a property-related fee must meet all of the following requirements: (1) revenues derived from the fee must not exceed the funds required to provide the property-related service; (2) revenues from the fee must not be used for any purpose other than that for which the fee is imposed; (3) the

[2] Raftelis does not practice law nor does it provide legal advice. The above discussion is to provide a general review of apparent state institutional constraints and is labeled "legal framework" for literary convenience only.

amount of a fee imposed upon any parcel or person as an incident of property ownership must not exceed the proportional cost of the service attributable to the parcel; (4) the fee may not be imposed for a service, unless the service is actually used by, or immediately available to, the owner of the property subject to the fee. A fee based on potential or future use of a service is not permitted and stand-by charges must be classified as assessments subject to the ballot protest and proportionality requirements for assessments; (5) no fee may be imposed for general governmental services, such as police, fire, ambulance, or libraries, where the service is available to the public in substantially the same manner as it is to property owners. The five substantive requirements in Article XIII D are structured to place limitations on (1) the use of the revenue collected from property-related fees and (2) the allocation of costs recovered by such fees to ensure that they are proportionate to the cost of providing the service attributable to each parcel.

2.2.2. RATE SETTING PROCESS

Revenue Requirements. The COS Study used the revenue requirements method for allocating costs of service. This methodology is consistent with industry standards established by the WEF. The revenue requirements analysis "compares the revenues of the utility to its operating and capital costs to determine the adequacy of the existing rates to recover the utility's costs."[3]

Cost of Service. After determining a utility's revenue requirements, the next step in the analysis is determining the cost of service. The COS Study functionalized the costs, expenses, and assets of the wastewater system by major operating functions to determine the cost of service. After the assets and the costs of operating those assets were properly categorized by function, the COS Study classified them and allocated the revenue requirements to the various customer classes (e.g., single-family residential, multi-family residential, and non-residential) by determining the characteristics of those classes and the customer class' contribution to the incurred costs, such as flow and strength service characteristics. The impact that these matters have on system operations determined how the costs were allocated among the various customer classes.

Rate Design. The final part of the analysis was the rate design. Rate design involves developing a rate structure that proportionately recovers costs from customers. The final rate structure and rate recommendations were based on the District's existing rate design and updated to fund the utility's long-term projected costs of providing service, proportionally allocate costs to all customers, provide a reasonable and prudent balance of revenue stability while encouraging conservation, and comply with the substantive requirements of Article XIII D.

2.3. Organization of Part I: Wastewater Cost of Service

Part I of this Report includes three sections in addition to the Executive Summary and this Overview. A brief description of the remaining sections follows.

- ***Section 3 – Cost of Service Analysis: Wastewater Utility*** describes the findings and results of the wastewater rate study. It includes a description of the wastewater system, the wastewater cost of service methodology, the user classifications, the determination of annual revenues required from user charges, and a detailed discussion on the Cost of Service, which includes allocation of costs to wastewater parameters and the determination of unit costs.
- ***Section 4 – Proposed Wastewater User Charges*** includes a detailed discussion of the proposed wastewater user charges and the customer impacts resulting from the proposed user charges.

[3] American Water Works Association, Principles of Water Rates, Fees and Charges: Manual of Water Supply Practices M1 (6th ed. 2012).

- ***Section 5 – Proposed FY 2020 and FY 2021 Wastewater User Charges*** includes the revenue requirements proposed for FY 2020 and FY 2021 and proposed user charges using the results of the Cost of Service.
- ***Appendices -*** includes the results of the wastewater strength survey, a detail of the O&M expenses, and the fixed asset listing.

2.4. Acknowledgements

This Report was a team effort among the District's Project Team, the Woodard & Curran Team, and the Raftelis Team. We would like to thank the individuals listed below who contributed their time, expertise, and support to make this project a success. Throughout the project the input and direction provided by the District Project Team was critical to addressing the numerous issues and topics enumerated in this report.

- Eileen White – EBMUD, Wastewater Director
- Catherine Humphrey - EBMUD, Principal Management Analyst
- Tepa Banda – EBMUD (formerly), Principal Management Analyst
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- Kristen Font – EBMUD, Wastewater Control Representative
- Saji Pierce – EBMUD, Attorney
- Richard Lou – EBMUD, Principal Management Analyst
- Sophia Skoda – EBMUD, Finance Director
- Dave Richardson – Woodard & Curran, Principal
- Mark Takemoto – Woodard & Curran, Senior Wastewater Engineer, Project Manager
- Susan Hsu – Woodard & Curran, Environmental Engineer

3. Cost of Service Analysis: Wastewater Utility

This section of the report discusses the allocation of O&M expenses and capital costs to the appropriate functional categories consistent with industry standards and the determination of unit costs. In this COS Study, wastewater rates were calculated based on data from FY 2017 because it was a representative year and because there was a full year of actual, functionalized expense data available at the time the COS Study commenced. Accordingly, FY 2017 is defined as the Test Year. Test Year revenue requirements are used in the cost allocation process. In Section 5, the FY 2020 and FY 2021 proposed revenue requirements will be used to calculate the proposed FY 2020 and FY 2021 user charges following the results of the cost of service for the Test Year.

As part of the COS Study, the District has defined three customer classes for the wastewater system: SFR, MFR, and non-residential. Non-residential customers are further classified into Business Classification Codes based on the type of business operated, which are grouped together or identified based on common characteristics of wastewater contributed to the system, including flow and strength. 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. As described in this report, the rates for the wastewater fees have five components: a Service Charge, a Flow Charge, a Strength Charge, a SF Bay Pollution Prevention Fee, and a Wet Weather Facilities Charge.

To allocate the cost of service among the different customer classes, costs first need to be allocated to the appropriate wastewater functional categories. The following sections describe the allocation of the operating and capital costs of service to the appropriate parameters of the wastewater system.

The total cost of wastewater service is analyzed by system function in order to equitably distribute costs of service to the various classes of customers. For this analysis, wastewater utility costs of service are developed consistent with the guidelines for allocating costs detailed in the WEF Manual of Practice No. 27, Financing and Charges for Wastewater Systems, 2004.

The wastewater COS analysis consists of six major steps, as outlined below:

1. Conduct plant mass balance analysis to estimate the flows and strength characteristics of each customer class.
2. Functionalize O&M expenses and capital costs into functional categories such as Treatment, Billing, and Customer Service.
3. Allocate each functional category into cost components such as Infiltration and Inflow (I&I), Flow, Strength, and Billing and Customer Service.
4. Develop customer class characteristics by cost component.
5. Calculate the cost component unit rates by dividing the total cost in each cost component in Step 3 by the customer class characteristics in Step 4.
6. Calculate the cost by customer class by multiplying the unit cost in Step 5 by the customer class characteristics in Step 4.

3.1. Wastewater COS Study Objectives

In reviewing the District's existing rates and charges, Raftelis discussed a number of considerations with staff. In addition to the general updates of cost of service, the following items were identified as primary objectives of the COS Study.

1. Review current wastewater rate structures.
2. Conduct a cost of service analysis for wastewater rates and charges subject to Proposition 218.
3. Review and update the detailed cost allocations for the unit processes at the (MWWTP).
4. Evaluate alternative methods of measuring wastewater strength and recommend a method.
5. Review domestic strength concentration to reflect reduced flows at the plant.
6. Review allocation of wet weather costs to reflect the costs of I&I into the plant.
7. Develop fair and equitable wastewater user charges.
8. Validate cost of service methodology and calculation of wastewater charges.
9. Demonstrate the impacts of the proposed wastewater user charges on typical customer bills.

3.2. Wastewater Characterization and Unit Process O&M and Capital Cost Allocation Update

This section documents the results as well as the methodology and assumptions used to update wastewater treatment unit processes at the MWWTP and the O&M and capital cost allocations for the COS Study. Woodard & Curran (W&C) reviewed the assumptions and methods used to calculate O&M and capital cost allocations used in the 2015 Wastewater Cost of Service Study (2015 COS Study) prepared by Raftelis which were based on the 2000 Wastewater Rates Cost Allocation Updated (2000 COS Study) prepared by Carollo Engineers. For the current COS Study, focused updates were made to the wastewater characterization parameters, specifically the parameters used for organic strength and applied to overall residential wastewater strength. In addition, updated O&M and capital cost allocations were calculated to apply to parameters of Inflow & Infiltration (I&I) flow [stormwater (SW) and groundwater (GW) flow], wastewater flow (WW), Chemical Oxygen Demand (COD), and Total Suspended Solids (TSS) .

3.2.1. WASTEWATER CHARACTERIZATION UPDATE

As part of the 2018 COS Study, updates to the wastewater characterization for organic strength and for residential wastewater strength were performed.

3.2.1.1. Update to Organic Strength Measurement

The 2000 and 2015 COS Studies utilized Chemical Oxygen Demand filtered (CODf) as a parameter for organic strength. CODf is the fraction of total COD that is measured from a wastewater sample filtered through a 1.5-micron filter. Historically CODf has been used by the District due to the cannery and industrial discharges of its customers at the time. However, presently CODf is not commonly used as a wastewater strength measurement, and the District's customer base no longer includes many high strength industrial customers where the distinction is relevant.

Carbonaceous Biochemical Oxygen Demand ($cBOD_5$) and COD were considered as a replacement for CODf as part of this COS Study. Raftelis conducted a survey of parameters used by 12 major wastewater agencies to measure wastewater strength and most use either COD or biochemical oxygen demand (BOD) as measurements of organic strength (see Appendix A). COD was chosen over $cBOD_5$ to be used for the 2018 COS Study because

COD measurements are easier to perform and have a faster analysis turnaround time. CODf was replaced directly with COD as part of this COS Study based on the assumption that the ratio of CODf/COD is approximately the same for all dischargers. The particulate COD fraction was allocated to only TSS and not COD to avoid repeated allocation (double counting) of the particulate COD fraction.

3.2.1.2. Residential Wastewater Strength Characterization

In November 2017 and June 2018, the District conducted residential wastewater sampling at four locations within the EBMUD wastewater service area to characterize the relationship between CODf, COD, cBOD, and BOD in residential wastewater for use in the COS Study. The sample results showed that, on average, the COD in residential wastewater is 3.8 times higher than CODf. W&C reviewed the sampling data for consistency and correspondence with residential wastewater data from outside the EBMUD wastewater service area. Based on the results of the sampling data, Raftelis developed updated residential strength data with input from District staff.

3.2.2. O&M COST ALLOCATION

3.2.2.1. O&M Cost Allocation Calculation Process

The O&M functional category allocations from the 2000 COS Study were calculated as illustrated in the following steps:

1. Unit processes were allocated a contribution percentage from each cost component including stormwater (SW) infiltration, groundwater (GW) infiltration parameter, wastewater (WW) flow, COD, and TSS based on the function of the unit process and available flow and wastewater data. Because TSS is the measurement of all solids suspended in wastewater, it also includes the particulate fraction of COD that can be filtered out and is not included in the CODf fraction. The particulate COD fraction was allocated to only TSS and not COD to avoid repeated allocation of the particulate COD fraction.

   For example, unit cost allocations for oxygenation tank maintenance were calculated based on the assumptions that each of the eight oxygenation tanks are maintained on the same schedule and that the cost associated with stormwater flow is proportional to the number of dedicated wet weather tanks. With 3 of the 8 tanks dedicated to wet weather treatment, the stormwater allocation is calculated as follows:

   $$SW = \text{No. Wet Weather Tanks/Total No. Tanks} = 3/8 = 38\%$$

   The remaining cost is allocated to dry weather flow, COD, and TSS equally and calculated as follows:

   $$GW = (100\% - 38\%) * 33\%^{(1)} * 10\%^{(2)} = 2\%$$

   $$WW = (100\% - 38\%) * 33\%^{(1)} * 90\%^{(2)} = 18\%$$

   $$COD = (100\% - 38\%) * 33\%^{(1)} = 21\%$$

   $$TSS = (100\% - 38\%) * 33\%^{(1)} = 21\%$$

   Notes: 1. Costs not attributable to stormwater are allocated equally 1/3 each to dry weather flow (wastewater and groundwater), COD, and TSS.
   2. Dry weather flow comprised of 90% wastewater and 10% GW infiltration.

The unit process assignments to each O&M functional categories are presented in Table 3-1. The cost component allocations in bold have been updated in the current COS Study and more details are provided in Section 3.2.2.3.

Each unit process was then assigned to an O&M functional category. The unit processes assigned to each O&M functional category are presented in Table 3-1. Allocations for each O&M category were then calculated in Table 3-2. The unit processes designations in bold have been updated in the current COS Study and more details are provided in Section 3.2.2.3

Table 3-1: Unit Process Cost Component Allocations

Unit Process Designation	SW	GW	Flow	COD	TSS
Interception	16	10	74	0	0
Pre/Post Chlorination	16	10	74	0	0
Dechlorination	16	10	74	0	0
Scum Disposal	0	0	0	0	100
Influent Pumping	16	10	74	0	0
Grit Removal	16	10	0	0	74
Primary Sedimentation (Operation)	8	9	83	0	0
Primary Sedimentation (Maintenance)	**44**	**6**	**51**	**0**	**0**
Primary Sludge Pumping	0	0	0	0	100
Oxygen Production	0	0	0	50	50
Oxygenation Tanks (Operation)	8	3	27	31	31
Oxygenation Tanks (Power)	8	1	3	44	44
Oxygenation Tanks (Maintenance)	38	2	18	21	21
RAS/WAS Pumping	0	0	0	50	50
Operations Center	6	3	27	32	32
WAS Thickening	0	0	0	50	50
Sludge Digestion	0	0	0	25	75
Power Generation Station	6	3	20	32	39
Debt Services	0	0	24	35	41
Sludge Dewatering	0	0	0	25	75
Sludge Disposal	0	0	0	25	75
Effluent Disposal	16	10	74	0	0
Wet Weather Facilities	100	0	0	0	0

Each unit process was then assigned to an O&M functional category. The unit processes assigned to each O&M functional category are presented in Table 3-2. The unit process designations in bold have been updated in the current COS Study and more details are provided in Section 3.2.2.4.

Table 3-2: Unit Process Designation Assignments

O&M Functional Categories	Unit Process Designations
Interceptor	Interceptor
Wet	Wet Weather Facilities
Influent Operations	**Pre/Post Chlorination** **Dechlorination** **Influent Pumping** **Effluent Disposal**
Influent Maintenance	**Pre/Post Chlorination** **Dechlorination** **Influent Pumping** **Effluent Disposal**
Primary Operations	**Scum Disposal** **Grit Removal** **Primary Sedimentation (Operation)** **Primary Sludge Pumping**
Primary Maintenance	**Scum Disposal** **Grit Removal** **Primary Sedimentation (Maintenance)** **Primary Sludge Pumping**
Secondary Operations	Oxygen Production Oxygenation Tanks (Operation) Oxygenation Tanks (Power) Secondary Clarification (Operation) RAS/WAS Pumping Operations Center
Secondary Maintenance	Oxygen Production Oxygenation Tanks (Maintenance) Oxygenation Tanks (Power) Secondary Clarification (Maintenance) RAS/WAS Pumping Operations Center
Sludge Operations	WAS Thickening Sludge Digestion Sludge Dewatering Sludge Disposal
Sludge Maintenance	WAS Thickening Sludge Digestion Sludge Dewatering Sludge Disposal
PGS	Power Generation Station

2. Allocations for each O&M functional category were then calculated based on the unit process allocations in each category and the respective cost percentages of each unit process. For example, the secondary maintenance functional category allocations were calculated from the cost weighted average of the cost component allocation for the unit processes assigned to the category including Oxygen Production, Oxygenation Tanks (Maintenance), Oxygenation Tanks (Power), Secondary Clarification (Maintenance), RAS/WAS Pumping, and Operations Center. The values used to calculate the secondary functional category is shown in Table 3-3.

Table 3-3: Secondary Maintenance Functional Category Allocations[1]

Unit Process Designation	SW	GW	Flow	COD	TSS	% of budget
O2 Tanks (Mtn)	38	2	18	21	21	26%
O2 Tanks (Power)	8	1	3	44	44	6%
Secondary Clarification (Mtn)	17	3	24	28	28	26%
Operations Center	6	3	27	32	32	6%
RAS/WAS Pumping	0	0	0	50	50	7%
O2 Production	0	0	0	50	50	29%
Secondary Maintenance Allocation	**15%**	**2%**	**13%**	**35%**	**35%**	

Notes: 1. Unit process contribution allocations and relative percent of each O&M budget based on values used in the 2000 COS Study.

3.2.2.2. O&M Cost Allocation Review

W&C reviewed the O&M cost allocations from the 2000 and 2005 COS Studies for each unit process designation in view of current wastewater treatment plant operation and available data. The allocations and the unit processes assigned to each O&M category were then reviewed.

Flow Contribution Calculations

The stormwater, groundwater infiltration, and wastewater flow contributions of 16%, 10% and 74% used in the 2000 COS Study were used in this COS Study and not updated because the balance of base wastewater flow, stormwater, and groundwater infiltration entering the District's interceptors and the MWWTP has only marginally changed in the last two decades based on review of 2008-2017 flow data. The analysis of 2008 to 2017 flow data is presented below.

The flow contribution percentages from the 2000 COS Study were calculated as follows from influent flow data and customer water consumption data from FY 1990 to FY 1999. In that 10-year period, the Average Day Annual Flow (ADAF) was 76.5 MGD and the Average Dry Weather Flow (ADWF) was 64.1 MGD.

1. Wastewater flow was determined based on water consumption data for industrial, commercial, and residential accounts. The base wastewater flow was estimated at 56.8 MGD. The percentage of flow from the base wastewater flow is estimated as follows:

$$\%WW = WW/ADAF = 56.8/76.5 = \mathbf{74\%}$$

2. Stormwater flow was estimated as the difference of the ADAF and ADWF. The stormwater inflow was estimated as follows:

$$SW = ADAF - ADWF = 76.5\ MGD - 64.1\ MGD = 12.4\ MGD.$$
$$\%SW = (ADAF - ADWF)/ADAF = 12.4/76.5 = \mathbf{16\%}$$

3. Groundwater infiltration flow was estimated as the fraction of ADWF not accounted for in the base wastewater flow. The groundwater inflow was estimated as follows:

GW= ADWF – WW = 64.1 MGD – 56.8 MGD = 7.3 MGD
%GW = (ADWF – WW)/ADAF = 7.3/76.5 = **10%**

2008 to 2017 Flow Data Review

W&C reviewed influent flow data from 2008-2017 to verify the above flow allocations are still valid. The 10-year ADAF, ADWF and SW flows from 2008 to 2017 are shown in Table 3-4. The 10-year average ADAF, ADWF, and SW flows have decreased 20%, 21%, and 15%, respectively, from FY 1990-FY 1999 flows.

Table 3-4: Annual Average Influent Flow Data in MGD from 2008-2017

Year	ADAF	ADWF	SW (ADAF-ADWF)
2008	65	58	7
2009	66	54	12
2010	70	55	15
2011	67	56	11
2012	64	51	13
2013	52	49	3
2014	55	46	9
2015	47	43	4
2016	59	45	14
2017	64	47	17
10-year Average	**60.9**	**50.4**	**10.5**
% decrease from FY 1990– FY 1999 flow data	**20%**	**21%**	**15%**

The updated flow contributions were estimated based on the assumption that groundwater infiltration flows have decreased by the same percentage (15%) as the stormwater inflow flows. It is assumed that factors contributing to I&I such as cracked pipes and leaky joints in the collection system will affect groundwater infiltration and stormwater inflow equally. Collection system improvements to address those issues are assumed to have reduced inflow and infiltration to the same degree. The updated SW, GW, and WW flow contributions were estimated as 17%, 10%, and 73%, respectively, and calculated as follows:

1. Stormwater inflow was estimated as the difference of the ADAF and ADWF. The stormwater inflow was estimated as follows:

SW= ADAF- ADWF= 60.9-50.4= 10.5 MGD
% SW = SW/ADAF = 10.5/60.9 = **17%**

2. Groundwater infiltration was assumed to have decreased by the same percentage (15%) as stormwater infiltration flows. The groundwater inflow was estimated as follows:

GW = 15% * 7.3 MGD = 6.2 MGD
%GW = GW/ADAF= 6.2/60.9 = **10%**

3. Wastewater flow- Because current water consumption data was not available, wastewater flow was estimated as the fraction of ADAF not included as SW and WW. The percentage of flow from the base wastewater flow is estimated as follows:

WW=ADAF – SW – WW = 60.9 – 10.5 – 6.2 = 44.2 MGD
%WW = WW/ADAF= 44.2/60.9 = **73%**

The influent flow contributions to stormwater, groundwater, and wastewater flows from the 2000 COS Study and the estimated flow contributions from 2008 to 2017 flow data are summarized in Table 3-5. Because the change in flow contributions are minimal (1% increase from 16% to 17% for stormwater and 1% decrease from 74% to 73% for wastewater flow), the stormwater inflow, groundwater infiltration, and base wastewater flows used in the 2000 COS Study are still used in the current COS Study.

Table 3-5: Summary of Influent Flow Contributions

Time Period	SW	GW	WW
FY 1990 – FY 1999	16%	10%	74%
2008 - 2017	17%	10%	73%

Based on W&C's review, the same unit process and functional O&M category allocations used in the 2000 COS Study were found to still be valid except for the Primary Sedimentation (maintenance) unit process allocations and the Influent and Primary O&M category allocations. The proposed updates to these allocations are described below.

3.2.2.3. Primary Sedimentation (Maintenance) Unit Process Allocations Update

The primary sedimentation (maintenance) unit process was updated to reflect the current operation of the primary sedimentation tanks. The assumptions and methods used to calculate the cost allocations in the 2000 COS Study are still valid. Primary sedimentation tanks are maintained on a set schedule and associated costs for each of the 16 sedimentation tanks were assumed to be the same and proportional to the total number of tanks. Therefore, COD and TSS loadings are assumed to have no impact on maintenance costs and maintenance costs are attributed to the stormwater, groundwater infiltration, and wastewater flow parameters.

Maintenance cost allocations to stormwater and dry weather flows are estimated as the ratio of sedimentation tanks dedicated to wet and dry weather flows, respectively. There are currently seven dedicated wet weather primary sedimentation tanks, an increase from six dedicated tanks in the 2000 COS Study where the primary maintenance cost allocations were 38% SW, 6% GW, and 56% WW. The updated primary sedimentation (maintenance) process allocations were calculated as follows:

SW = (No. Wet Weather Tanks)/(Total No. Tanks)
= 7/16 = **43.8%**

GW = (% dry weather flows due to GW) * (No. tanks dedicated to dry weather flows)
= (WW/ADWF)[(1)] * (9*16)
= 0.1 * (9/16) = **5.6%**

WW = 100% - Stormwater - Groundwater
= 100% - 43.8% - 5.6% = **50.6 %**

Notes: 1. Flows used to estimate contributions of groundwater and wastewater to dry weather flows are from the 2000 COS Study.

3.2.2.4. Influent and Primary O&M Categories Allocations Update

In the 2015 COS Study, Influent and Primary O&M categories were assigned the same allocation percentages. Influent Operation and Primary Operation categories were both assigned cost allocations of 22.6% I&I flow, 62.7% wastewater flow, and 14.7% TSS and Influent Maintenance and Primary Maintenance categories were both assigned cost allocations of 28.0% I&I flow, 64.3% wastewater flow, and 7.7% TSS for maintenance. These allocations were calculated based on the weighted cost allocations from the following Unit Process Designations: Pre/Post Chlorination, Influent Pumping, Effluent Disposal, Grit Removal, Scum Disposal, Primary Sedimentation, and Primary Sludge Pumping. The updated allocations included distinct allocations for the influent and primary categories because influent O&M costs are generally related to I&I and wastewater flow only and primary O&M costs are generally related to both flow and TSS. For the influent and primary O&M allocations, particulate COD fraction is attributed to TSS and not accounted for in COD allocations to avoid repeated allocation (double counting) of the particulate COD fraction. The current updated allocations breakout the Pre/Post Chlorination, Influent Pumping, and Effluent Disposal processes to Influent O&M categories. Grit Removal, Scum Disposal, Primary Sedimentation, and Primary Sludge Pumping were assigned to the Primary O&M categories. Note that post chlorination and effluent disposal is allocated to influent O&M because the allocation includes only flow and the costs are tracked by the District in that manner. The allocation for each O&M category was calculated as the weighted average of the budget percentages for each unit process. The percent of the budget for each unit process designation was estimated from O&M budgets in the 2000 COS Study because there have not been significant changes to the unit processes. The updated allocation percentages for the influent and primary O&M categories as well as the unit process allocations attributed to each category are presented in Table 3-6.

Table 3-6: Updated Influent and Primary O&M Allocations

O&M Categories	Unit Process Designation	SW	GW	WW	COD	TSS	Percent of Budget[2]
Influent Operation	Pre/Post Chlorination	16%	10%	74%	0%	0%	100.0%
	Dechlorination	16%	10%	74%	0%	0%	
	Influent Pumping	16%	10%	74%	0%	0%	
	Effluent Disposal	16%	10%	74%	0%	0%	
	Updated Allocations	**16%**	**10%**	**74%**	**0%**	**0%**	**100.0%**
Influent Maintenance	Pre/Post Chlorination	16%	10%	74%	0%	0%	100.0%
	Influent Pumping	16%	10%	74%	0%	0%	
	Effluent Disposal	16%	10%	74%	0%	0%	
	Updated Allocations	**16%**	**10%**	**74%**	**0%**	**0%**	**100.0%**
Primary Operation	Scum Disposal	0%	0%	0%	0%	100%	100.0%
	Grit Removal	16%	10%	0%	0%	74%	
	Primary (Operation)	8%	9%	83%	0%	0%	
	Primary Sludge Pumping	0%	0%	0%	0%	100%	
	Updated Allocations	**6%**	**5%**	**23%**	**0%**	**67%**	**100.0%**
Primary Maintenance	Scum Disposal	0%	0%	0%	0%	100%	100.0%
	Grit Removal	16%	10%	0%	0%	74%	
	Primary (Maintenance)[1]	44%	6%	51%	0%	0%	
	Primary Sludge Pumping	0%	0%	0%	0%	100%	
	Updated Allocations	**32%**	**5%**	**36%**	**0%**	**28%**	**100.0%**

Rows or columns that do not add to 100% are off due to rounding

Notes:
1. Updated allocation for Primary Sedimentation (Maintenance) from Section 3.2.2.3.
2. Relative percent of each O&M budget based on estimated O&M budgets in 2000 COS Study. Costs for Influent O&M unit processes were presented as one budget and not broken out in the 2000 COS Study.
3. For the influent and primary O&M allocations, particulate COD fraction is attributed to TSS and not accounted for in COD allocations to avoid repeated allocation (double counting) of the particulate COD fraction.

3.2.2.5. Proposed O&M Cost Allocations

The cost allocations for each O&M category are summarized and shown in Table 3-11 with updated allocations in bold. I&I allocations were calculated as the sum of stormwater and groundwater allocations.

3.2.3. CAPITAL COST ALLOCATIONS

W&C reviewed the allocations for each unit process and for each asset category at the MWWTP. These capital cost allocations from the 2015 COS Study were based on the allocations from the 2000 COS Study. Allocations for each unit process have been confirmed to be reasonable and were not updated. The allocations for each asset category from the 2015 COS Study remain unchanged except for allocations for the Secondary Treatment Facility category which were updated as described below.

3.2.3.1. Secondary Treatment Facility Capital Cost Allocations Update

Costs for Secondary Treatment Facility assets have been allocated 6% to I&I and 94% wastewater flow. The cost allocations for the category were updated to account for COD and TSS. W&C updated the allocations by assigning the following unit process to Oxygenation Tanks (Structure), Oxygenation Tanks (Equipment), Secondary Clarifiers (Structure), and Secondary Clarifiers (Equipment) and calculating the weighted allocation of each parameter relative to the cost of each unit process. The proposed Secondary Treatment Facility capital cost

allocation is 2% I&I flow, 21% wastewater flow, 38% COD, and 38% TSS. The allocations and relative costs of each unit process used to calculate the proposed allocations are shown in Table 3-7.

Table 3-7: Updated Secondary Treatment Asset Allocations

Unit Process	SW	GW	Flow	COD	TSS	Percent of Cost
Oxygenation Tanks (structure)	0%	0%	0%	50%	50%	30%
Oxygenation Tanks (equipment)	0%	0%	0%	50%	50%	29%
Secondary Clarifiers (structure)	0%	6%	94%	0%	0%	22%
Secondary Clarifiers (equipment)	0%	6%	0%	47%	47%	19%
Updated Allocations	**0%**	**2%**	**21%**	**38%**	**38%**	**100%**

Notes: 1. Unit process allocations to I&I, Flow, COD, and TSS were based on allocations in the 2000 COS Study. Percent of cost were estimated from 6% Annual Cost from 2000 COS Study
2. Rows or columns that do not add to 100% are off due to rounding.

3.2.3.2. Proposed Capital Cost Allocations

The cost allocations for each Asset category are summarized and shown in Table 3-13 with updated allocations in bold.

3.3. Plant Balance

The plant balance analysis is used to estimate and validate the wastewater loadings (flow and strength) generated by each customer class. While wastewater discharged into sewers for most users is not metered when it enters the wastewater system, the total amount of flow and strength entering the treatment plant and treated every day is a known quantity. Additionally, non-residential and industrial customer flows can be estimated based on their water usage. Non-residential and industrial customer strengths are estimated according to industry accepted standards. The remaining loadings(total plant influent less: I&I, trucked waste at headworks, and non-residential and industrial loadings), are assigned to residential users.

The District currently bases its residential (SFR accounts and 2-4 dwelling unit MFR accounts) loadings on a fixed strength of 29.42 lbs of COD per dwelling unit and 11.01 lbs of TSS per dwelling unit. These fixed strengths per dwelling unit are calculated based on the average residential monthly flow per dwelling unit and the current assumed domestic strength concentrations of 855 mg/l COD and 320 mg/l TSS. The current residential assumed domestic strength concentrations are based on previous COS studies.

In addition to the fixed strength charge for residential customers, the District also assesses a variable flow charge to residential customers. However, an analysis of the billing records shows that about 97 percent of all residential customers' winter use falls within the 9 ccf per month per dwelling unit flow cap. Therefore, the flow charge is capped at 9 ccf per month per dwelling unit to recognize that some of the billed residential water consumption is likely used for irrigation purposes that does not contribute to wastewater flows and does not enter the wastewater system. Accordingly, residential billed water usage above 9 ccf per month per dwelling unit is not assessed a wastewater flow charge.

The plant balance analysis is performed by comparing the net plant influent loadings to the billed loadings from the wastewater treatment customers as shown in Table 3-8. The net plant influent is calculated by taking the total plant

influent[4] and subtracting the loadings from the R2 program (trucked waste)[5]. These loadings are then compared to the loadings from the wastewater treatment customers and the difference is attributed to I&I. The billed loadings by customer class shown in Table 3-8 include the assumed COD and TSS concentrations. The net plant loading analysis showed that the waste strength concentration for domestic strength should be decreased from 855 mg/l COD (225 mg/l CODf) and 320 mg/l TSS to 713 mg/l COD and 300 mg/l TSS[6]. Note that the plant flow shown is equivalent to 33.6 million ccf per year.

[4] Data for the total influent into the MWWTP were provided by the District.
[5] Data for the R2/trucked waste loadings were provided by the District.
[6] Based on residential wastewater sampling provided by the District.

Table 3-8: Test Year Plant Balance

	Flow (MG/yr)	COD (lbs/yr)	TSS (lbs/year)
Total Plant Influent	25,128	135,294,419	70,376,824
Less: Trucked Waste at Headworks	153	27,239,083	9,275,005
Less: I&I	9,280	1,790,750	19,311,516
Net Plant Influent	**15,695**	**106,264,585**	**41,790,303**
Non-Residential	3.57	231,114	12,522
2010 Meat Products	0.71	19,034	8,250
2011 Slaughterhouses	4.43	202,816	14,405
2020 Dairy Product Processing	0.00	0	0
2030 Fruit and Vegetable Canning	3.71	67,943	23,819
2040 Grain Mills	16.62	761,665	166,454
2050 Bakeries	3.27	141,043	819
2060 Sugar Processing	0.00	0	0
2077 Rendering Tallow	74.24	1,921,219	80,546
2080 Beverage Mfgr & Bottling	6.74	872,389	73,149
2090 Specialty Foods Mfgr	2.78	40,463	14,847
2600 Pulp and Paper Products	2.15	5,785	25,073
2810 Inorganic Chemicals Mfgr	1.96	1,585	491
2820 Synthetic Material Mfgr	90.86	1,518,571	53,081
2830 Drug Mfgr	0.63	23,683	2,200
2840 Cleaning and Sanitation Prod	0.10	6,775	1,224
2850 Paint Mfgr	0.00	0	0
2893 Ink and Pigment Mfgr	0.00	0	0
3110 Leather Tanning/Finishing	6.10	19,736	28,005
3200 Earthenware Mfgr	12.77	30,985	38,372
3300 Primary Metals Mfgr	9.60	20,703	2,404
3400 Metal Prod Fabricating	0.00	0	0
3410 Drum and Barrel Mfgr	3.49	7,516	2,036
3470 Metal Coating	71.39	481,078	59,576
4500 Air Transportation	582.66	8,795,348	4,570,780
5812 Food Service Establishment	3,700.25	22,002,084	9,264,035
6513 Apartment Bldgs (5+ units)	136.77	958,529	776,137
7000 Hotels, Motels with Food	12.37	190,045	31,999
7210 Commercial Laundries	185.15	1,796,661	293,572
7215 Coin Operated Laundromats	46.32	3,370,948	286,034
7218 Industrial Laundries	54.96	281,461	36,690
7300 Laboratories	34.60	270,446	57,744
7542 Auto Washing and Polishing	147.20	634,876	331,688
8060 Hospitals	544.20	2,053,699	363,326
8200 Schools	2,097.67	12,472,968	5,251,776
All Other	110.57	1,113,973	572,114
Multi-Use Customers	3.57	231,114	12,522
Total Non-Residential	**7,968**	**60,315,143**	**22,443,169**
Residential	**7,728**	**45,949,443**	**19,347,134**
Total (Residential & Non-Residential)	**15,695**	**106,264,585**	**41,790,303**

3.4. Allocation of Revenue Requirements by Function

The wastewater utility is comprised of various facilities, each designed and operated to fulfill a given function. In order to provide adequate service to its customers at all times, the utility must be capable of not only collecting the total amount of wastewater generated (flow), but also treating and removing various nutrients (e.g., TSS and COD) from the flow.

The separation of costs by function allows the allocation of these costs to the functional cost components. Table 3-9 shows the Test Year O&M expenses (based on the FY 2017 budget provided by the District) arranged by the different functional categories, as classified by District staff and W&C[7].

Table 3-9: Allocation of Wastewater O&M Expenses

O&M Categories	FY 2017
Interceptor	$2,783,233
R2	$2,360,771
Wet	$1,992,871
Influent Op	$6,732,235
Influent Mtn	$797,026
Primary Op	$21,814
Primary Mtn	$442,219
Secondary Op	$3,281,986
Secondary Mtn	$825,682
Sludge Op	$9,395,911
Sludge Mtn	$1,559,040
Lab	$5,813,131
Permit	$1,142,071
I/I	$3,998,801
PGS	$1,982,606
Reclaimed	$952,791
Reimbursed	$217,513
Billing	$2,231,746
Overhead	$17,394,592
Total O&M Expenses	**$63,926,037**

Table 3-10 shows the Test Year Replacement Cost Less Depreciation (RCLD) value of the total wastewater assets by the different asset classes, which are then classified by functions similar to the O&M expenses. RCLD value reflects the cost to replace the asset today less accumulated depreciation and was obtained from District's financial records[8].

[7] A detail of O&M expenses by functional categories can be found in Appendix B.
[8] A detail of the District's fixed assets can be found in Appendix C.

Table 3-10: Allocation of Wastewater Assets - RCLD Value

Assets Categories	FY 2017
Mwwtp-Chlorine System	$186,190
Mwwtp-Chlorination Building	$2,780,669
Mwwtp-Outfall Land	$4,914,159
Mwwtp-Outfall Submarine	$9,205,483
Mwwtp-Outfall Bridge	$218,197
Mwwtp-Effluent Pump Station	$10,388,412
Mwwtp-Water Pump Station #3	$863,322
Mwwtp-Process Water Plant	$32,917
Mwwtp-Dechlorination Station	$8,720,247
Mwwtp-Filter Plant Solids Handling Facility	$22,626,059
Mwwtp-Sodium Bisulfite Area	$831,280
Mwwtp-Grounds & Improvements	$41,252,798
Mwwtp-Administration and Lab Building	$16,251,701
Mwwtp-Administration and Lab Center	$18,533,056
Mwwtp-Maintenance Center	$13,965,697
Mwwtp-Piping for Plant Utilities	$8,456,170
Mwwtp-Bulk Storage Area	$1,505,954
Mwwtp-Field Services Bldg	$3,531,511
Wastewater Land - General	$18,838,029
All Wastewater Portable Equipment	$9,022,399
Mwwtp-Aerated Grit Tanks	$5,543,750
Mwwtp-Grit Dewatering Station	$11,380,202
Mwwtp-Influent Pump Station	$32,843,269
North Interceptor	$58,423,966
South Interceptor	$50,076,391
Alameda Interceptor	$20,746,285
Estuary Crossing	$1,097,142
Central Avenue Interceptor	$12,000,875
South Foothill Interceptor	$29,180,384
Adeline Street Interceptor	$24,768,192
Powell Street Interceptor	$4,032,671
ANAS Interceptor	$4,637,798
Wood St Interceptor	$22,104,951
Pump Station A-Albany	$3,237,385
Pump Station B-Fernside	$5,585,393
Pump Station C-Krusi Park	$12,134,648
Pump Station D-Oak Street	$1,554,592
Pump Station E-Grand Street	$1,400,556
Pump Station F-Atlantic Avenue	$1,685,186
Pump Station G-Airport	$2,795,700
Pump Station H-Fruitvale	$9,657,560
Pump Station J-Frederick Street	$1,257,012
Pump Station K-7Th Street	$1,412,098
Pump Station L	$5,015,645
Pump Station Q- Wet Weather Page St Berkeley	$554,685
Pump Station N (new)	$5,806
ANAS Pump Station R	$9,838,090

Allocation of Wastewater Assets - RCLD Value (continued)

Assets Categories	FY 2017
Pump Station M - Bridgeway	$2,830,600
Mwwtp-Reactor Deck Area-Oxygen Production	$5,642,565
Mwwtp-Secondary Treatment Facility	$68,121,502
Mwwtp-Power Generation Station	$77,442,495
Mwwtp-Scum Dewatering Station	$9,352,008
Mwwtp-Chemical Trench	$893,677
Mwwtp-Pre-Chlorination Facility	$745,210
Mwwtp-Chemical Storage Building (Relocated)	$2,403,686
Mwwtp-Sludge Digestion Facilities	$127,315,822
Mwwtp-Sludge Dewatering Facilities	$34,276,421
Mwwtp-Temp Sludge Dewatering Facility	$1,402,992
Mwwtp-Odor Control at Sludge Thickener	$12,152,375
Mwwtp-Composting Facility	$1,201,029
Pt. Isabel Tp-Treatment & Pretreatment Structures	$38,484,242
Mwwtp-Mid-Plant Pump Station	$5,416,024
Mwwtp-Wet Weather Pump Station	$1,350,090
Mwwtp-Washdown Pump Station	$162,968
Oakport Wet Weather-Pretreatment Structure	$10,353,021
Oakport Wet Weather-Pretreatment Structure	$2,403,306
Mwwtp-Channel Crossing for Bypass Channel	$6,247,609
Mwwtp 90" Pipe-Primry Effluent Bypass	$2,793,630
Mwwtp 72" Pipe-Primry Influent Bypass	$2,552,927
Mwwtp-Diversion Structure	$27,553,044
Mwwtp-Bypass Inlet Structure	$10,480,288
North Interceptor Junction Storage	$863,142
Mwwtp-Bypass Outlet Structure	$616,410
Mwwtp-Final Effluent Bypass Channel	$8,548,717
Mwwtp-Storage Basin	$26,506,411
Oakport WW-Chlor System	$177,325
Oakport WW-DeChlor System	$149,286
Oakport WW-Control Bldg	$847,594
Oakport WW-Emg Gen	$632,197
Oakport WW-Drainage	$1,050,006
Oakport WW-Storage Bldg.	$633,213
Oakport WW-Lscape/Pav/Fence	$3,344,044
San Antonio Creek Wet Weather TP	$12,622,514
San Antonio Creek Ww Dechlorination Facility	$5,917,619
San Antonio Creek Ww Outfall Structure	$2,787,508
San Antonio Creek Ww Gravity Sewer	$588,791
San Antonio Creek Ww Lake Merritt Channel Crossing	$1,587,448
San Antonio Creek Ww Outfall Subequacous Pipeline	$2,484,495
Versailles interceptor	$1,622,502
Total Assets	**$1,047,651,236**

3.5. Allocation of Functional Costs to Cost Components

In order to allocate costs of service to the different user classes, unit costs of service are developed. O&M expenses and capital costs are functionalized as transmission, treatment, billing, administrative, etc. These total functionalized costs are then allocated to the flow, COD, and TSS parameters based on the design of each facility. Since treatment plants are designed to treat flow, COD, and TSS, treatment costs are allocated to those three parameters based on the design of each component of the treatment system. For example, the equipment in the secondary clarifiers is designed to remove suspended solids. Along with suspended solids there is also some removal of COD; therefore, the equipment cost is allocated to TSS and COD based on the removal of those two parameters. Additionally, the secondary tank structure is designed for flow; therefore, the structure cost is allocated to flow. Most of the wastewater systems must handle the additional loadings from wet weather flows; therefore, a portion of their system costs are allocated to the I&I parameter. Administrative costs such as billing, collecting, and customer accounting are assigned to the Customer cost component. General expenses not associated with I&I, Flow, COD, TSS, or Customer Service are assigned to the Other cost component. The Other cost components are then spread among the remaining costs centers proportionately.

Table 3-11 shows the different allocations to the cost components such as the parameters for I&I, Flow, COD, TSS, etc. of each O&M functional cost category. The allocations are calculated based on the functions of each category, provided by the District from the 2000 Wastewater Rates Cost Allocation Update prepared by Carollo Engineers. These allocations were reviewed by W&C (as discussed in Section 3.2.2). Updated allocations were calculated and provided by W&C for Influent Operation, Influent Maintenance, Primary Operation, and Primary Maintenance (as shown in Table 3-6) and are indicated by bold text. Raftelis has reviewed these updated allocations to ensure that they are based on the design function of each expense as they relate to Flow, COD, TSS, I&I and has confirmed that they are reasonable.

Table 3-11: Allocation to Cost Components - O&M

O&M Categories	I&I	Flow	COD	TSS	Customer	Other	Total
Interceptor	26%	74%					100%
R2						100%	100%
Wet	100%						100%
Influent Op	**26%**	**74%**					100%
Influent Mtn	**26%**	**74%**					100%
Primary Op	**11%**	**23%**		**67%**			100%
Primary Mtn	**37%**	**36%**		**28%**			100%
Secondary Op	9%	24%	34%	34%			100%
Secondary Mtn	17%	13%	35%	35%			100%
Sludge Op			31%	69%			100%
Sludge Mtn			28%	73%			100%
Lab						100%	100%
Permit						100%	100%
I/I	100%						100%
PGS	9%	20%	32%	39%			100%
Reclaimed						100%	100%
Reimbursed						100%	100%
Billing					100.0%		100%
Overhead						100.0%	100%

Table 3-12 shows the allocation of O&M expenses (shown in Table 3-9) to the different cost components based on the allocation percentages shown in Table 3-11[9].

Table 3-12: Allocation of O&M Expenses to Cost Components

O&M Categories	I&I	Flow	COD	TSS	Customer	Other	Total
Interceptor	$723,640	$2,059,592	$0	$0	$0	$0	$2,783,233
R2	$0	$0	$0	$0	$0	$2,360,771	$2,360,771
Wet	$1,992,871	$0	$0	$0	$0	$0	$1,992,871
Influent Op	$1,750,381	$4,981,854	$0	$0	$0	$0	$6,732,235
Influent Mtn	$207,227	$589,799	$0	$0	$0	$0	$797,026
Primary Op	$2,300	$4,938	$0	$14,576	$0	$0	$21,814
Primary Mtn	$162,886	$157,266	$0	$122,067	$0	$0	$442,219
Secondary Op	$295,379	$784,395	$1,099,465	$1,102,747	$0	$0	$3,281,986
Secondary Mtn	$137,063	$105,687	$291,466	$291,466	$0	$0	$825,682
Sludge Op	$0	$0	$2,940,920	$6,454,991	$0	$0	$9,395,911
Sludge Mtn	$0	$0	$428,736	$1,130,304	$0	$0	$1,559,040
Lab	$0	$0	$0	$0	$0	$5,813,131	$5,813,131
Permit	$0	$0	$0	$0	$0	$1,142,071	$1,142,071
I/I	$3,998,801	$0	$0	$0	$0	$0	$3,998,801
PGS	$178,435	$396,521	$634,434	$773,216	$0	$0	$1,982,606
Reclaimed	$0	$0	$0	$0	$0	$952,791	$952,791
Reimbursed	$0	$0	$0	$0	$0	$217,513	$217,513
Billing	$0	$0	$0	$0	$2,231,746	$0	$2,231,746
Overhead	$0	$0	$0	$0	$0	$17,394,592	$17,394,592
Total O&M Expenses	**$9,448,982**	**$9,080,052**	**$5,395,021**	**$9,889,367**	**$2,231,746**	**$27,880,869**	**$63,926,037**
% allocation	14.8%	14.2%	8.4%	15.5%	3.5%	43.6%	

Capital costs include capital improvements financed from annual revenues, debt service and other sources. Capital costs related to specific facilities will vary significantly from year to year. Allocating these costs based on the functions of these specific facilities could cause the rates to the different customer classes to change from year to year. A reasonable method of assigning capital costs to functional components, widely practiced in the industry, is to allocate such costs on the basis of net plant investment recognizing that over a period of time these allocations will provide costs to be passed on to customers equitably.

Net plant investment is represented by the total asset value of wastewater utility facilities less accumulated depreciation[10]. The estimated fiscal year net plant investment in wastewater facilities consists of the net plants in service as of the end of the Test Year.

Table 3-13 shows the different allocations to the cost components such has I&I, Flow, COD, and TSS of each capital asset. There are no "Customer" or "Other" cost components included because the capital assets are allocated directly to I&I, Flow, COD and TSS. The allocations of the wastewater capital assets were developed for the District in the 2000 Wastewater Rates Cost Allocation Update prepared by Carollo Engineers. These allocations were reviewed by W&C (as discussed in Section 3.2.3). Updated allocations were calculated and provided by W&C for the Secondary Treatment facility (as shown in Table 3-7) and are indicated by bold text. Raftelis has reviewed these updated allocations to ensure that they are based on the design function of each asset as they relate to Flow, COD, TSS, and I&I and has confirmed that they are reasonable.

[9] A detail of O&M expenses by functional categories can be found in Appendix B.
[10] A detail of the District's fixed assets can be found in Appendix C.

Table 3-13: Allocation to Cost Components – Capital

Assets Categories	I&I	Flow	COD	TSS	Total
Mwwtp-Chlorine System	50%	50%			100%
Mwwtp-Chlorination Building	50%	50%			100%
Mwwtp-Outfall Land	50%	50%			100%
Mwwtp-Outfall Submarine	50%	50%			100%
Mwwtp-Outfall Bridge	50%	50%			100%
Mwwtp-Effluent Pump Station	50%	50%			100%
Mwwtp-Water Pump Station #3	50%	50%			100%
Mwwtp-Process Water Plant	50%	50%			100%
Mwwtp-Dechlorination Station	50%	50%			100%
Mwwtp-Filter Plant Solids Handling Facility	50%	50%			100%
Mwwtp-Sodium Bisulfite Area	50%	50%			100%
Mwwtp-Grounds & Improvements	45%	24%	11%	20%	100%
Mwwtp-Administration and Lab Building	45%	24%	11%	20%	100%
Mwwtp-Administration and Lab Center	45%	24%	11%	20%	100%
Mwwtp-Maintenance Center	45%	24%	11%	20%	100%
Mwwtp-Piping for Plant Utilities	45%	24%	11%	20%	100%
Mwwtp-Bulk Storage Area	45%	24%	11%	20%	100%
Mwwtp-Field Services Bldg	45%	24%	11%	20%	100%
Wastewater Land - General	45%	24%	11%	20%	100%
All Wastewater Portable Equipment	45%	24%	11%	20%	100%
Mwwtp-Aerated Grit Tanks	45%	24%	11%	20%	100%
Mwwtp-Grit Dewatering Station	61%			39%	100%
Mwwtp-Influent Pump Station	61%	39%			100%
North Interceptor	61%	39%			100%
South Interceptor	61%	39%			100%
Alameda Interceptor	61%	39%			100%
Estuary Crossing	61%	39%			100%
Central Avenue Interceptor	61%	39%			100%
South Foothill Interceptor	61%	39%			100%
Adeline Street Interceptor	61%	39%			100%
Powell Street Interceptor	61%	39%			100%
ANAS Interceptor	61%	39%			100%
Wood St Interceptor	61%	39%			100%
Pump Station A-Albany	61%	39%			100%
Pump Station B-Fernside	68%	32%			100%
Pump Station C-Krusi Park	61%	39%			100%
Pump Station D-Oak Street	40%	60%			100%
Pump Station E-Grand Street	82%	18%			100%
Pump Station F-Atlantic Avenue	86%	14%			100%
Pump Station G-Airport	21%	79%			100%
Pump Station H-Fruitvale	23%	77%			100%
Pump Station J-Frederick Street	51%	49%			100%
Pump Station K-7Th Street	22%	78%			100%
Pump Station L	40%	60%			100%
Pump Station Q- Wet Weather Page St Berkeley	68%	32%			100%
Pump Station N (new)	43%	57%			100%
ANAS Pump Station R	43%	57%			100%

Allocation to Cost Components – Capital (continued)

Assets Categories	I&I	Flow	COD	TSS	Total
Pump Station M - Bridgeway	69%	31%			100%
Mwwtp-Reactor Deck Area-Oxygen Production			50%	50%	100%
Mwwtp-Secondary Treatment Facility	**3%**	**21%**	**38%**	**38%**	100%
Mwwtp-Power Generation Station		24.0%	35.0%	41.0%	100%
Mwwtp-Scum Dewatering Station				100%	100%
Mwwtp-Chemical Trench	50%	50%			100%
Mwwtp-Pre-Chlorination Facility	50%	50%			100%
Mwwtp-Chemical Storage Building (Relocated)			30%	70%	100%
Mwwtp-Sludge Digestion Facilities			30%	70%	100%
Mwwtp-Sludge Dewatering Facilities			30%	70%	100%
Mwwtp-Temp Sludge Dewatering Facility			30%	70%	100%
Mwwtp-Odor Control at Sludge Thickener			30%	70%	100%
Mwwtp-Composting Facility			30%	70%	100%
Pt. Isabel Tp-Treatment & Pretreatment Structures	100%				100%
Mwwtp-Mid-Plant Pump Station	100%				100%
Mwwtp-Wet Weather Pump Station	100%				100%
Mwwtp-Washdown Pump Station	100%				100%
Oakport Wet Weather-Pretreatment Structure	100%				100%
Oakport Wet Weather-Pretreatment Structure	100%				100%
Mwwtp-Channel Crossing for Bypass Channel	100%				100%
Mwwtp 90" Pipe-Primry Effluent Bypass	100%				100%
Mwwtp 72" Pipe-Primry Influent Bypass	100%				100%
Mwwtp-Diversion Structure	100%				100%
Mwwtp-Bypass Inlet Structure	100%				100%
North Interceptor Junction Storage	100%				100%
Mwwtp-Bypass Outlet Structure	100%				100%
Mwwtp-Final Effluent Bypass Channel	100%				100%
Mwwtp-Storage Basin	100%				100%
Oakport WW-Chlor System	100%				100%
Oakport WW-DeChlor System	100%				100%
Oakport WW-Control Bldg	100%				100%
Oakport WW-Emg Gen	100%				100%
Oakport WW-Drainage	100%				100%
Oakport WW-Storage Bldg.	100%				100%
Oakport WW-Lscape/Pav/Fence	100%				100%
San Antonio Creek Wet Weather TP	100%				100%
San Antonio Creek Ww Dechlorination Facility	100%				100%
San Antonio Creek Ww Outfall Structure	100%				100%
San Antonio Creek Ww Gravity Sewer	100%				100%
San Antonio Creek Ww Lake Merritt Channel Crossing	100%				100%
San Antonio Creek Ww Outfall Subequacous Pipeline	100%				100%
Versailles interceptor	100%				100%

Table 3-14 shows the allocation of the RCLD value of the wastewater assets (shown in Table 3-10) to the different cost components based on the allocation percentages shown in Table 3-13.

Table 3-14: Allocation of Wastewater Assets to Cost Components

Assets Categories	I&I	Flow	COD	TSS	Total
Mwwtp-Chlorine System	$93,095	$93,095	$0	$0	$186,190
Mwwtp-Chlorination Building	$1,390,334	$1,390,334	$0	$0	$2,780,669
Mwwtp-Outfall Land	$2,457,079	$2,457,079	$0	$0	$4,914,159
Mwwtp-Outfall Submarine	$4,602,741	$4,602,741	$0	$0	$9,205,483
Mwwtp-Outfall Bridge	$109,099	$109,099	$0	$0	$218,197
Mwwtp-Effluent Pump Station	$5,194,206	$5,194,206	$0	$0	$10,388,412
Mwwtp-Water Pump Station #3	$431,661	$431,661	$0	$0	$863,322
Mwwtp-Process Water Plant	$16,459	$16,459	$0	$0	$32,917
Mwwtp-Dechlorination Station	$4,360,123	$4,360,123	$0	$0	$8,720,247
Mwwtp-Filter Plant Solids Handling Facility	$11,313,030	$11,313,030	$0	$0	$22,626,059
Mwwtp-Sodium Bisulfite Area	$415,640	$415,640	$0	$0	$831,280
Mwwtp-Grounds & Improvements	$18,559,527	$9,757,955	$4,592,631	$8,342,685	$41,252,798
Mwwtp-Administration and Lab Building	$7,311,598	$3,844,185	$1,809,285	$3,286,633	$16,251,701
Mwwtp-Administration and Lab Center	$8,337,974	$4,383,817	$2,063,266	$3,747,999	$18,533,056
Mwwtp-Maintenance Center	$6,283,131	$3,303,452	$1,554,787	$2,824,328	$13,965,697
Mwwtp-Piping for Plant Utilities	$3,804,409	$2,000,226	$941,417	$1,710,118	$8,456,170
Mwwtp-Bulk Storage Area	$677,525	$356,219	$167,656	$304,554	$1,505,954
Mwwtp-Field Services Bldg	$1,588,817	$835,345	$393,159	$714,189	$3,531,511
Wastewater Land - General	$8,475,181	$4,455,956	$2,097,218	$3,809,675	$18,838,029
All Wastewater Portable Equipment	$4,059,154	$2,134,162	$1,004,454	$1,824,628	$9,022,399
Mwwtp-Aerated Grit Tanks	$3,381,687	$0	$0	$2,162,062	$5,543,750
Mwwtp-Grit Dewatering Station	$6,941,923	$4,438,279	$0	$0	$11,380,202
Mwwtp-Influent Pump Station	$20,034,394	$12,808,875	$0	$0	$32,843,269
North Interceptor	$35,638,620	$22,785,347	$0	$0	$58,423,966
South Interceptor	$30,546,598	$19,529,792	$0	$0	$50,076,391
Alameda Interceptor	$12,655,234	$8,091,051	$0	$0	$20,746,285
Estuary Crossing	$669,257	$427,886	$0	$0	$1,097,142
Central Avenue Interceptor	$7,320,534	$4,680,341	$0	$0	$12,000,875
South Foothill Interceptor	$17,800,035	$11,380,350	$0	$0	$29,180,384
Adeline Street Interceptor	$15,108,597	$9,659,595	$0	$0	$24,768,192
Powell Street Interceptor	$2,459,929	$1,572,742	$0	$0	$4,032,671
ANAS Interceptor	$2,829,057	$1,808,741	$0	$0	$4,637,798
Wood St Interceptor	$13,484,020	$8,620,931	$0	$0	$22,104,951
Pump Station A-Albany	$2,201,422	$1,035,963	$0	$0	$3,237,385
Pump Station B-Fernside	$3,407,090	$2,178,303	$0	$0	$5,585,393
Pump Station C-Krusi Park	$4,853,859	$7,280,789	$0	$0	$12,134,648
Pump Station D-Oak Street	$1,274,766	$279,827	$0	$0	$1,554,592
Pump Station E-Grand Street	$1,204,478	$196,078	$0	$0	$1,400,556
Pump Station F-Atlantic Avenue	$353,889	$1,331,297	$0	$0	$1,685,186
Pump Station G-Airport	$643,011	$2,152,689	$0	$0	$2,795,700
Pump Station H-Fruitvale	$4,925,355	$4,732,204	$0	$0	$9,657,560
Pump Station J-Frederick Street	$276,543	$980,470	$0	$0	$1,257,012
Pump Station K-7Th Street	$564,839	$847,259	$0	$0	$1,412,098
Pump Station L	$3,410,638	$1,605,006	$0	$0	$5,015,645
Pump Station Q- Wet Weather Page St Berkeley	$238,515	$316,171	$0	$0	$554,685
Pump Station N (new)	$2,496	$3,309	$0	$0	$5,806
ANAS Pump Station R	$1,475,713	$8,362,376	$0	$0	$9,838,090

Allocation of Wastewater Assets to Cost Components (continued)

Assets Categories	I&I	Flow	COD	TSS	Total
Pump Station M - Bridgeway	$1,953,114	$877,486	$0	$0	$2,830,600
Mwwtp-Reactor Deck Area-Oxygen Production	$0	$0	$2,821,283	$2,821,283	$5,642,565
Mwwtp-Secondary Treatment Facility	$1,703,038	$14,373,637	$26,022,414	$26,022,414	$68,121,502
Mwwtp-Power Generation Station	$0	$18,586,199	$27,104,873	$31,751,423	$77,442,495
Mwwtp-Scum Dewatering Station	$0	$0	$0	$9,352,008	$9,352,008
Mwwtp-Chemical Trench	$446,839	$446,839	$0	$0	$893,677
Mwwtp-Pre-Chlorination Facility	$372,605	$372,605	$0	$0	$745,210
Mwwtp-Chemical Storage Building (Relocated)	$0	$0	$721,106	$1,682,580	$2,403,686
Mwwtp-Sludge Digestion Facilities	$0	$0	$38,194,747	$89,121,076	$127,315,822
Mwwtp-Sludge Dewatering Facilities	$0	$0	$10,282,926	$23,993,495	$34,276,421
Mwwtp-Temp Sludge Dewatering Facility	$0	$0	$420,898	$982,094	$1,402,992
Mwwtp-Odor Control at Sludge Thickener	$0	$0	$3,645,712	$8,506,662	$12,152,375
Mwwtp-Composting Facility	$0	$0	$360,309	$840,720	$1,201,029
Pt. Isabel Tp-Treatment & Pretreatment Structures	$38,484,242	$0	$0	$0	$38,484,242
Mwwtp-Mid-Plant Pump Station	$5,416,024	$0	$0	$0	$5,416,024
Mwwtp-Wet Weather Pump Station	$1,350,090	$0	$0	$0	$1,350,090
Mwwtp-Washdown Pump Station	$162,968	$0	$0	$0	$162,968
Oakport Wet Weather-Pretreatment Structure	$10,353,021	$0	$0	$0	$10,353,021
Oakport Wet Weather-Pretreatment Structure	$2,403,306	$0	$0	$0	$2,403,306
Mwwtp-Channel Crossing for Bypass Channel	$6,247,609	$0	$0	$0	$6,247,609
Mwwtp 90" Pipe-Primry Effluent Bypass	$2,793,630	$0	$0	$0	$2,793,630
Mwwtp 72" Pipe-Primry Influent Bypass	$2,552,927	$0	$0	$0	$2,552,927
Mwwtp-Diversion Structure	$27,553,044	$0	$0	$0	$27,553,044
Mwwtp-Bypass Inlet Structure	$10,480,288	$0	$0	$0	$10,480,288
North Interceptor Junction Storage	$863,142	$0	$0	$0	$863,142
Mwwtp-Bypass Outlet Structure	$616,410	$0	$0	$0	$616,410
Mwwtp-Final Effluent Bypass Channel	$8,548,717	$0	$0	$0	$8,548,717
Mwwtp-Storage Basin	$26,506,411	$0	$0	$0	$26,506,411
Oakport WW-Chlor System	$177,325	$0	$0	$0	$177,325
Oakport WW-DeChlor System	$149,286	$0	$0	$0	$149,286
Oakport WW-Control Bldg	$847,594	$0	$0	$0	$847,594
Oakport WW-Emg Gen	$632,197	$0	$0	$0	$632,197
Oakport WW-Drainage	$1,050,006	$0	$0	$0	$1,050,006
Oakport WW-Storage Bldg.	$633,213	$0	$0	$0	$633,213
Oakport WW-Lscape/Pav/Fence	$3,344,044	$0	$0	$0	$3,344,044
San Antonio Creek Wet Weather TP	$12,622,514	$0	$0	$0	$12,622,514
San Antonio Creek Ww Dechlorination Facility	$5,917,619	$0	$0	$0	$5,917,619
San Antonio Creek Ww Outfall Structure	$2,787,508	$0	$0	$0	$2,787,508
San Antonio Creek Ww Gravity Sewer	$588,791	$0	$0	$0	$588,791
San Antonio Creek Ww Lake Merritt Channel Crossing	$1,587,448	$0	$0	$0	$1,587,448
San Antonio Creek Ww Outfall Subequacous Pipeline	$2,484,495	$0	$0	$0	$2,484,495
Versailles interceptor	$989,726	$632,776	$0	$0	$1,622,502
Total Assets	**$465,802,474**	**$233,849,995**	**$124,198,140**	**$223,800,627**	**$1,047,651,236**
% allocation	44.5%	22.3%	11.9%	21.4%	

3.6. Allocation of Revenue Requirements

The total revenue requirements net of revenue credits from miscellaneous sources is, by definition, the net revenue requirement or net cost of providing service as shown in Table 3-15. This cost is then used as the basis to develop unit costs for the wastewater parameters and to allocate costs to the various customer classes in proportion to the services rendered. The concept of proportionate allocation to customer classes requires that allocations should take into consideration not only the volume of wastewater discharge used but also strength loadings associated with the wastewater flow.

The annual revenue requirement or cost of service to be recovered from wastewater charges includes operation and maintenance expenses and other non-operating expenses. O&M expenses include costs directly related to the collection, treatment, and disposal of wastewater and maintenance of system facilities as shown in Table 3-12.

The total Test Year cost of service to be recovered from the District's wastewater customers, shown in Table 3-15, is based on the FY 2017 budget provided by the District and estimated at approximately $91.5 million. Of this, approximately $47.3 million are operating costs and the remaining $44.2 million are capital costs, which consists of capital expenditures and existing debt service. The cost of service analysis is based upon the premise that the utility must generate annual revenues adequate to meet the estimated annual revenue requirements. As part of the cost of service analysis, revenues from sources other than wastewater rates and charges (e.g., revenues from miscellaneous services) are deducted from the appropriate cost elements. Additional deductions are made to reflect interest income and other non-operating income during the Test Year. Adjustments are also made to account for changes in cash balances to fund reserves and/or capital expenses to ensure adequate collection of revenue and to determine annual revenues needed from rates.

Table 3-15 shows the allocation of revenue requirements to operating and capital components to determine the revenue required from rates.

Table 3-15: Allocation of Revenue Requirements

	FY 2017		
	Operating	**Capital**	**Total**
Revenue Requirements			
O&M Expenses	$63,926,037		$63,926,037
Existing Debt Service		$33,301,178	$33,301,178
Proposed Debt Service		$0	$0
Admin Capital		$0	$0
Rate Funded Capital		$27,954,400	$27,954,400
Total Revenue Requirements	**$63,926,037**	**$61,255,578**	**$125,181,615**
Revenue Offsets			
Resource Recovery	$7,248,557	$4,655,692	$11,904,249
Property Taxes, less customer assistance		$4,514,980	$4,514,980
Ad Valorem Bond Levy		$2,865,215	$2,865,215
Interest	$485,439		$485,439
Laboratory Services	$4,210,262		$4,210,262
Reimbursements	$1,475,502		$1,475,502
Permit Fees	$1,592,767		$1,592,767
Capacity Charges		$0	$0
All Other Revenue			
BABS REBATE		$2,504,058	$2,504,058
PSL FEES	$1,126,722		$1,126,722
PGS ENERGY SALES		$900,014	$900,014
MISC[11]	$494,820		$494,820
Transfer (to)/from Rate Stabilization Reserve (RSR)	$0		$0
Total Revenue Offsets	**$16,634,069**	**$15,439,958**	**$32,074,027**
Adjustments			
Annual Cash Balance		$1,619,175	$1,619,175
Total Adjustments	**$0**	**$1,619,175**	**$1,619,175**
Cost of Service to be Recovered from Rates	**$47,291,967**	**$44,196,445**	**$91,488,412**

3.7. Development of Unit Costs of Service

In order to allocate costs of service to the different customer classes, unit costs of service need to be developed for each cost component. The unit costs of service are developed by dividing the total annual costs allocated to each component by the total annual service units of the respective cost component.

The unit costs of service are developed by dividing the total annual costs by the appropriate service units, such as flow, COD or TSS generated in the system, and accounts for billing costs. Table 3-16 shows the service units, such as annual flow, total pounds of COD and TSS, bills, etc. for each customer class. These service units are determined from the plant balance shown in Table 3-8 and FY 2017 consumption data provided by the District[12].

[11] Miscellaneous revenue includes billboard revenue and lease revenue.
[12] Number of parcels for FY 2017 provided by the District.

Table 3-16: Customer Class Service Units

Customer Class		Flow (ccf)	COD (lbs/yr)	TSS (lbs/yr)	Accounts	Bills	Parcels
Residential							
8800	Single Family	8,292,421	36,882,062	15,529,289	145,582	1,746,984	104,958
6514	MFR 2-4 Units	2,038,675	9,067,381	3,817,844	14,729	176,748	54,920
Subtotal Residential		**10,331,096**	**45,949,443**	**19,347,134**	**160,311**	**1,923,732**	**159,878**
Non-Residential							
2010	Meat Products	4,776	231,114	12,522			
2011	Slaughterhouses	944	19,034	8,250			
2020	Dairy Product Processing	5,917	202,816	14,405			
2030	Fruit and Vegetable Canning	0	0	0			
2040	Grain Mills	4,955	67,943	23,819			
2050	Bakeries	22,221	761,665	166,454			
2060	Sugar Processing	4,372	141,043	819			
2077	Rendering Tallow	0	0	0			
2080	Beverage Mfgr & Bottling	99,255	1,921,219	80,546			
2090	Specialty Foods Mfgr	9,014	872,389	73,149			
2600	Pulp and Paper Products	3,716	40,463	14,847			
2810	Inorganic Chemicals Mfgr	2,869	5,785	25,073			
2820	Synthetic Material Mfgr	2,620	1,585	491			
2830	Drug Mfgr	121,476	1,518,571	53,081			
2840	Cleaning and Sanitation Prod	839	23,683	2,200			
2850	Paint Mfgr	140	6,775	1,224			
2893	Ink and Pigment Mfgr	0	0	0			
3110	Leather Tanning/Finishing	0	0	0			
3200	Earthenware Mfgr	8,157	19,736	28,005			
3300	Primary Metals Mfgr	17,075	30,985	38,372			
3400	Metal Prod Fabricating	12,835	20,703	2,404			
3410	Drum and Barrel Mfgr	0	0	0			
3470	Metal Coating	4,660	7,516	2,036			
4500	Air Transportation	95,439	481,078	59,576			
5812	Food Service Establishment	778,957	8,795,348	4,570,780			
6513	Apartment Bldgs (5+ units)	4,946,864	22,002,084	9,264,035			
7000	Hotels, Motels with Food	182,844	958,529	776,137			
7210	Commercial Laundries	16,536	190,045	31,999			
7215	Coin Operated Laundromats	247,521	1,796,661	293,572			
7218	Industrial Laundries	61,921	3,370,948	286,034			
7300	Laboratories	73,470	281,461	36,690			
7542	Auto Washing and Polishing	46,252	270,446	57,744			
8060	Hospitals	196,797	634,876	331,688			
8200	Schools	727,541	2,053,699	363,326			
	All Other	2,804,374	12,472,968	5,251,776			
	Multi-Use Customers	147,823	1,113,973	572,114			
Subtotal Non-Residential		**10,652,180**	**60,315,143**	**22,443,169**	**18,513**	**222,156**	**15,927**
Total		**20,983,276**	**106,264,585**	**41,790,303**	**178,824**	**2,145,888**	**175,805**

Table 3-17 shows the allocation of the revenue offsets from each miscellaneous revenue source to each cost component. The revenue offsets are applied to the capital or operating cost components (I&I, Flow, COD, TSS, etc.) of the revenue requirements based on an overall allocation percentage for O&M and Capital shown at the bottom of Table 3-12 and Table 3-14, respectively, with the following exceptions:

- Resource Recovery (R2) Revenue[13]:
  - Operating - $7.25 million of R2 revenue is used to offset operating costs. 33% of this revenue is assigned to COD, 11% to TSS, and 34% is assigned to Flow to offset the treatment costs for R2. An additional 22% of R2 revenue is assigned to the Other (general) cost component to offset the R2 program administration costs.[14]
  - Capital - $4.66 million of R2 revenue is used to offset the wastewater systems capital costs. $1.4 million of this revenue is assigned to COD and $3.26 million is assigned to TSS.
- Property Tax Revenue: The District's wastewater system receives approximately $4.5 million in property tax revenue that does not have specific spending restrictions. Because it is unrestricted, $400,000 of the property tax revenues are assigned to fund the District's Customer Assistance Program which provides financial assistance to low income customers for the payment of wastewater charges. The wastewater system's remaining property tax revenue is allocated to the wastewater system's capital costs.
- Operating Reimbursements: The operating reimbursements, including laboratory services, reimbursements, and permit fees, offset Other (general) costs, because costs for laboratory services and permitting are assigned to the Other cost component.
- Private Sewer Lateral Fees: The Private Sewer Lateral (PSL) fees are for the required inspection of private sewer laterals. The revenue from PSL fees are used to offset the Customer cost component since the corresponding PSL expenses are charged to the I&I program, which is reallocated to the Customer cost component.

The percentages, shown in Table 3-17, are applied to the revenue offsets, totaling $32.07 million, shown in Table 3-15, to determine the amount of offsets to be applied to each cost component.

[13] The R2 program is based on voluntary agreements entered into by the parties and thus its fees/charges are not subject to Proposition 218 or to detailed cost-based justifications.
[14] Allocation of the R2 program revenue to offset operating expenses was provided by the District based on an analysis of the treatment of R2 waste.

Table 3-17: Revenue Offsets Allocation

Revenue Offsets Allocation	I&I	Flow	COD	TSS	Customer	Other	Total
Operating							
Resource Recovery		33%	11%	34%		22%	100%
Interest	15%	14%	8%	15%	3%	44%	100%
Laboratory Services						100%	100%
Reimbursements						100%	100%
Permit Fees						100%	100%
All Other Revenue							100%
PSL FEES					100%		100%
MISC		14%	8%	15%	17%	44%	100%
Transfer (to)/from Rate Stabilization Reserve (RSR)		14%	8%	15%	17%	44%	100%
Capital							100%
Resource Recovery			30%	70%			100%
Property Taxes, less customer assistance	100%						100%
Ad Valorem Bond Levy	44%	22%	12%	21%			100%
Capacity Charges	44%	22%	12%	21%			100%
All Other Revenue							100%
BABS REBATE	44%	22%	12%	21%			100%
PGS ENERGY SALES	44%	22%	12%	21%			100%
Revenue Offsets	**($7,374,158)**	**($3,930,650)**	**($3,019,996)**	**($7,214,393)**	**($1,229,752)**	**($9,305,079)**	**($32,074,027)**

The Other component is spread proportionally back to the remaining costs components. The calculation of the unit cost for each component is shown at the bottom of Table 3-18. The I&I capital expense will be recovered on the Wet Weather Facilities Charge collected on the property tax bill on each property that is connected to the wastewater system to pay for the capital facilities required to handle the wet weather flows that enter the District's wastewater system through the local collection systems and sewer connections. The I&I operating expense is the portion of the wastewater operating costs that is allocated to the I&I and is recovered on the customer unit cost component because it has no relationship to treatment flow or strength. Table 3-18 shows the calculation of the unit cost for each cost component. Total capital expenses equal debt service, administration of capital, and direct expenses, less transfers from other funds for capital and an adjustment for annual cash balance as shown in Table 3-15.

Table 3-18: Development of Unit Costs

	I&I	Flow	COD	TSS	Customer	Other	Total
Operating Expenses (**Table 3-12**)	$9,448,982	$9,080,052	$5,395,021	$9,889,367	$2,231,746	$27,880,869	$63,926,037
I&I Operating Expenses to be Recovered on Customer	($9,448,982)				$9,448,982	$0	
Adjusted Operating Expenses	$0	$9,080,052	$5,395,021	$9,889,367	$11,680,728	$27,880,869	$63,926,037
Capital Expenses (less Annual Cash Balance) (**Table 3-15**)	$26,515,297	$13,311,656	$7,069,844	$12,739,606	$0	$0	$59,636,403
Revenue Offsets (**Table 3-17**)	($7,374,158)	($3,930,650)	($3,019,996)	($7,214,393)	($1,229,752)	($9,305,079)	($32,074,027)
Total Cost of Service	**$19,141,139**	**$18,461,058**	**$9,444,869**	**$15,414,580**	**$10,450,976**	**$18,575,790**	**$91,488,412**
Allocation of Other Cost	$4,876,546	$4,703,284	$2,406,249	$3,927,139	$2,662,572	($18,575,790)	$0
Allocated Cost of Service	**$24,017,686**	**$23,164,342**	**$11,851,117**	**$19,341,719**	**$13,113,548**	**$0**	**$91,488,412**
Unit of Service (**Table 3-16**)	175,805	20,983,276	106,264,585	41,790,303	2,145,888		
	parcel	ccf	lbs/yr	lbs/yr	bills/yr		
Unit Cost	$11.38	$1.104	$0.112	$0.463	$6.111		
	per month	per ccf			$/month		

3.8. Allocation of Costs to Customer Class

The unit cost of each of the cost categories shown in Table 3-18 is then applied to the projected Test Year usage and units of each customer class to derive customer class costs.

Table 3-19 shows the allocation of costs to each customer class, based on the service units from Table 3-16 and the unit cost from Table 3-18. This includes the I&I cost component assessed to SFR, MFR with up to 4 dwelling units, and to non-residential overall based on the average I&I parcel unit cost.

Table 3-19: Allocation of Costs to Customer Class

Customer Class		I&I	Flow	COD	TSS	Customer	Total
Residential							
8800	Single Family	$14,338,888	$9,154,360	$4,113,258	$7,187,389	$10,675,841	$45,469,736
6514	MFR 2-4 Units	$7,502,923	$2,250,581	$1,011,236	$1,767,005	$1,080,109	$13,611,854
Non-Residential		$2,175,875	$0	$0	$0	$1,357,598	$3,533,473
2010	Meat Products		$5,272	$25,775	$5,795		$36,843
2011	Slaughterhouses		$1,042	$2,123	$3,818		$6,983
2020	Dairy Product Processing		$6,532	$22,619	$6,667		$35,818
2030	Fruit and Vegetable Canning		$0	$0	$0		$0
2040	Grain Mills		$5,471	$7,577	$11,024		$24,072
2050	Bakeries		$24,531	$84,944	$77,039		$186,515
2060	Sugar Processing		$4,826	$15,730	$379		$20,935
2077	Rendering Tallow		$0	$0	$0		$0
2080	Beverage Mfgr & Bottling		$109,572	$214,263	$37,279		$361,115
2090	Specialty Foods Mfgr		$9,951	$97,293	$33,856		$141,099
2600	Pulp and Paper Products		$4,103	$4,513	$6,872		$15,487
2810	Inorganic Chemicals Mfgr		$3,167	$645	$11,605		$15,417
2820	Synthetic Material Mfgr		$2,892	$177	$227		$3,296
2830	Drug Mfgr		$134,103	$169,358	$24,567		$328,028
2840	Cleaning and Sanitation Prod		$926	$2,641	$1,018		$4,586
2850	Paint Mfgr		$155	$756	$566		$1,476
2893	Ink and Pigment Mfgr		$0	$0	$0		$0
3110	Leather Tanning/Finishing		$0	$0	$0		$0
3200	Earthenware Mfgr		$9,005	$2,201	$12,962		$24,168
3300	Primary Metals Mfgr		$18,850	$3,456	$17,759		$40,065
3400	Metal Prod Fabricating		$14,169	$2,309	$1,112		$17,590
3410	Drum and Barrel Mfgr		$0	$0	$0		$0
3470	Metal Coating		$5,144	$838	$942		$6,925
4500	Air Transportation		$105,359	$53,652	$27,574		$186,584
5812	Food Service Establishment		$859,924	$980,898	$2,115,485		$3,956,307
6513	Apartment Bldgs (5+ units)		$5,461,056	$2,453,774	$4,287,654		$12,202,484
7000	Hotels, Motels with Food		$201,849	$106,900	$359,218		$667,967
7210	Commercial Laundries		$18,255	$21,195	$14,810		$54,260
7215	Coin Operated Laundromats		$273,249	$200,372	$135,873		$609,494
7218	Industrial Laundries		$68,357	$375,944	$132,384		$576,685
7300	Laboratories		$81,107	$31,390	$16,981		$129,478
7542	Auto Washing and Polishing		$51,060	$30,161	$26,726		$107,947
8060	Hospitals		$217,252	$70,804	$153,515		$441,571
8200	Schools		$803,164	$229,038	$168,157		$1,200,359
	All Other		$3,095,869	$1,391,043	$2,430,669		$6,917,581
	Multi-Use Customers		$163,188	$124,235	$264,790		$552,214
Total Cost		**$24,017,686**	**$23,164,342**	**$11,851,117**	**$19,341,719**	**$13,113,548**	**$91,488,412**

The residential user class has the highest assignment of costs at $59 million and is responsible for 64.6 percent of the total cost of service. The non-residential user classes are responsible for the remaining 35.4 percent of the annual cost of service. I&I cost assignment is based on average I&I unit cost per parcel. The total on Table 3-19 includes I&I contribution of $24 million from all customer classes.

4. Proposed Wastewater User Charges

4.1. Setting Individual Component Rates

The revenue requirements and cost of service analyses described in the preceding sections of this report provide a basis for the design of a wastewater user charge structure. Setting rates involves the development of user charge schedules for each user class so as to recover the annual cost of service determined for each user class. This section of the report discusses the development of a schedule of wastewater rates for the District's user classes and analyzes the impact of the proposed changes in cost allocations and rate design on the user classes.

As a result of the COS Study, the District is retaining its current customer classes and rate structure for the wastewater user charges. The District has defined three customer classes for the wastewater system: SFR, MFR, and non-residential. Non-residential customers are further classified based on the type of business operated, which are grouped together or identified based on common characteristics of wastewater contributed to the system, including flow and strength. 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 primary emphasis in the design of rate structures is ordinarily placed on achieving fairness and equity, with the objective of being able to ensure that each customer class pays its proportionate share of costs and to comply with regulatory requirements. However, the individual customer class rates are determined based on the cost of service analysis.

The following subsections discuss how each rate component is calculated. The District's current wastewater rate structure has five components: a Service Charge, a Flow Charge, a Strength Charge, a SF Bay Pollution Prevention Fee, and a Wet Weather Facilities Charge.

1. **Service Charge:** The Service Charge is a fixed monthly charge per service connection and is calculated to recover a portion of the District's customer related costs defined in the COS.
2. **Flow Charge:** The Flow Charge is a variable monthly charge based on a customer's metered water use and assumptions regarding the volume of water returned to the sewer system. The charge recovers the flow related charges defined in the COS.
3. **Strength Charge:** The Strength Charge is based on the estimated amount of COD and TSS that a customer discharges into the sewer system, and is calculated to recover the District's costs of treating COD and TSS as defined in the COS. As residential customers' wastewater is fairly homogeneous, the strength charge is a fixed Treatment Strength Charge.
4. **SF Bay Pollution Prevention Fee:** The Pollution Prevention Fee is a fixed monthly charge that varies for residential and commercial customers based on the costs of the District's pollution prevention programs for residential and commercial customers. The District's pollution prevention programs were established to reduce pollutants at the source and protect the San Francisco Bay.
5. **Wet Weather Facilities Charge (WWFC) collected on the property tax bill:** The Wet Weather Facilities Charge is a fixed annual charge assessed by lot size for properties connected to the wastewater system. It is calculated to recover the District's I&I costs defined in the COS.

4.2. Proposed Residential Charges

The District currently has a fixed charge plus Flow Charge rate structure for its residential wastewater customers. One advantage of the fixed charge plus Flow Charge rate structure is that the fixed component can be used to stabilize revenues and to recognize the fact that wastewater system costs are mostly fixed, while the flow or variable component can be used to encourage water conservation. The fixed charges consist of a monthly Service Charge, assessed per account, and a monthly Strength Charge, assessed per dwelling unit. The monthly Strength Charge is assessed per dwelling unit because residential accounts include MFR customers that can have up to four (4) dwelling units. The Flow Charge is assessed per ccf of water usage, with a maximum of 9 ccf per month per dwelling unit. The maximum of 9 ccf per month per dwelling unit is used because an analysis of the billing records shows that about 97 percent of all residential customers' winter use falls within the 9 ccf per month per dwelling unit.

Table 4-1 shows the Test Year COS wastewater charges for residential customers, which includes SFR and MFR up to 4 dwelling units. Apartment buildings with 5 or more dwelling units are considered non-residential customers for wastewater billing purposes because the District does not track the number of individual dwelling units in large apartment buildings. The waste strength concentration for apartments with 5 or more units is assumed to be the same as the domestic strength used for the SFR and MFR up to 4 dwelling units on the basis that apartment dwellers are domestic users that generate residential strength. The revenue requirement for the Service Charge is the customer cost component (refer to Table 3-19), for the Strength Charge is the COD and TSS cost components, and for the Flow Charge is the flow component. The monthly Service Charge is $6.12 (rounded to the nearest cent from Table 3-18) and the Flow Charge is $1.11 (rounded to the nearest cent from Table 3-18). The Strength Charge per dwelling unit is based on 20.77 lbs of COD and 8.74 lbs of TSS per month times the unit rates of $0.112 and $0.463, respectively, from Table 3-18, for a total of $6.37. The average monthly charge shown in Table 4-1 is based on 6 ccf per month ($6.12 + $6.37 + (6 ccf x $1.11) = $19.15).

Table 4-1: Test Year Residential Wastewater Charges

	Revenue Requirements	Units of Service	COD (mg/l)	TSS (mg/l)	Test Year Proposed
Service Charge (per account)	$11,755,950	1,923,732			$6.12
Strength Charge (per dwelling unit)	$14,078,888	2,212,512	713	300	$6.37
Minimum monthly charge per household					$12.49
Plus: A flow charge per ccf (maximum of 9 ccf)	$11,404,941	10,331,096			$1.11
Minimum monthly charge at 0 units					$0.00
Maximum monthly charge at 9 ccf					$9.99
Total Residential Charge					
Minimum monthly charge					$12.49
Maximum monthly charge					$22.48
Average monthly charge at 6 ccf					$19.15

4.3. Proposed Non-Residential Charges

Similarly, the District is retaining the current rate structure and classification of customer groups based on the strength of their wastewater discharges. Non-residential customers will pay the same fixed charges as residential customers, assessed per meter, and will be charged a Flow Charge based on their actual water usage and their user classification.

Table 4-2 shows the Test Year COS wastewater charges for non-residential customers. The revenue requirement for the fixed charge is the customer component (refer to Table 3-19) and the Flow Charge is the sum of the flow, COD and TSS components. The monthly service charge is $6.12 (rounded to the nearest cent from Table 3-18). The treatment charge is the combined flow and strength treatment rates from the unit rates in Table 3-18 of $1.104 per ccf for flow, $0.112 per pound of COD, and $0.463 per pound of TSS. These unit rates are applied to one (1) ccf of flow and the pounds of COD and TSS based on the assumed concentrations listed in Table 4-2 .For example, non-residential customers that produce meat products have a Strength Charge based on 48.37 lbs of COD and 2.62 lbs of TSS per month times the unit rates of $0.112 and $0.463, respectively, from Table 3-18 for a total of $6.63. To this the flow charge of $1.104 is added for a total of $7.74 (rounded to the nearest cent).

Table 4-2: Test Year Non-Residential Wastewater Charges

	Revenue Requirements	Units of Service	COD (mg/l)	TSS (mg/l)	Test Year Proposed
Monthly Service Charge (per meter)	$1,357,598	222,156			$6.12
Treatment charge including flow processing (per ccf of sewage discharge)					
Meat Products	$36,843	4,776	7,752	420	$7.74
Slaughterhouses	$6,983	944	3,230	1,400	$7.41
Dairy Product Processing	$35,818	5,917	5,491	390	$6.07
Fruit and Vegetable Canning	$0	0	0	370	$4.89
Grain Mills	$24,072	4,955	2,196	770	$4.87
Bakeries (including Pastries)	$186,515	22,221	5,491	1,200	$8.41
Sugar Processing	$20,935	4,372	5,168	30	$4.81
Rendering Tallow	$0	0	0	3,500	$14.61
Beverage Manufacturing & Bottling	$361,115	99,255	3,101	130	$3.65
Specialty Foods Manufacturing	$141,099	9,014	15,504	1,300	$15.70
Pulp and Paper Products	$15,487	3,716	1,744	640	$4.18
Inorganic Chemicals Mfgr.	$15,417	2,869	323	1,400	$5.38
Synthetic Material Manufacturing	$3,296	2,620	97	30	$1.26
Drug Manufacturing	$328,028	121,476	2,003	70	$2.71
Cleaning and Sanitation Products	$4,586	839	4,522	420	$5.48
Paint Manufacturing	$1,476	140	7,752	1,400	$10.57
Ink and Pigment Manufacturing	$0	0	0	80	$3.82
Leather Tanning and Finishing	$0	0	0	1,700	$14.60
Earthenware Manufacturing	$24,168	8,157	388	550	$2.97
Primary Metals Manufacturing	$40,065	17,075	291	360	$2.35
Metal Products Fabricating	$17,590	12,835	258	30	$1.38
Drum and Barrel Manufacturing	$0	0	0	1,400	$14.86
Metal Coating	$6,925	4,660	258	70	$1.49
Air Transportation	$186,584	95,439	808	100	$1.96
Food Service Establishments	$3,956,307	778,957	1,809	940	$5.09
Apartment Buildings (5 or more units)	$12,202,484	4,946,864	713	300	$2.47
Hotels, Motels with Food Service	$667,967	182,844	840	680	$3.66
Commercial Laundries	$54,260	16,536	1,841	310	$3.29
Coin Operated Laundromats	$609,494	247,521	1,163	190	$2.47
Industrial Laundries	$576,685	61,921	8,721	740	$9.34
Laboratories	$129,478	73,470	614	80	$1.77
Automobile Washing and Polishing	$107,947	46,252	937	200	$2.34
Hospitals	$441,571	196,797	517	270	$2.25
Schools	$1,200,359	727,541	452	80	$1.66
All Other BCC (includes dischargers of only segregated domestic wastes from sanitary conveniences)	$6,917,581	2,804,374	713	300	$2.47

4.4. Proposed Wet Weather Facilities Charges

The WWFC funds capital expenses for the I&I facilities (wet weather facilities, interceptors, pumping stations and storage basins) that are required to handle the wet weather flows that enter the wastewater system through the local wastewater collection systems and sewer connections. The volume of wet weather flows that enter the wastewater

system from each property is proportional to the size of the collection system needed to serve each property. Properties with larger lots require more linear feet of collection system which presents more opportunity for storm water and ground water to enter through defects in the collection system. The volume of wet weather flows in the collection system has no direct relationship to a customer's monthly water use nor if the wastewater discharge is from a residential or non-residential customer. For these reasons, lot size rather than water service use is used as basis of the WWFC. The structure of WWFC is based on the rationale that larger lots contribute proportionally more to the wet weather flows than smaller lots. 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.

The I&I capital facilities are designed to handle 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.

Table 4-3 shows the calculation of the Test Year COS WWFC, based on median lot size for all customers. The total wet weather cost is divided by the total parcel areas within the District's service area to arrive at a unit cost per 1,000 sq ft. The proposed WWFC for each lot size is based on the unit cost multiplied by the median lot size in each bin.

Table 4-3: Test Year Wet Weather Facilities Charges

Lot size (sq ft)	Total # of Parcels	Median Lot Size (sq ft)	Test Year Proposed
0-5,000	104,958	4,000	$97.00
5,001-10,000	54,920	6,250	$151.56
over 10,001	15,927	14,284	$346.39
Total (Table 3-16)	**175,805**		
Total Wet Weather Costs (**Table 3-18**)	$24,017,686		
Total Area (1,000 sq ft)	990,583		
Unit Cost/yr/1,000sq ft	$24.25		

4.5. San Francisco Bay Pollution Prevention Fee

The District must undertake a variety of activities to successfully operate the Pretreatment Program and Pollution Prevention Program required by the United States Environmental Protection Agency (EPA) and the State of California (through the Regional Water Quality Control Board (RWQCB)).

The Pollution Prevention Program, required by the RWQCB, develops and implements strategies to minimize and monitor pollutants from both residential and non-residential sources. The fee applies to accounts in the District's wastewater service area to cover costs for program implementation and has not been increased since 2008. For non-residential customers (excluding apartment buildings with 5 or more dwelling units), the fee will remain $5.48 per month for FY 2020 and FY 2021. The fee for residential customers will remain $0.20 per month for each single family and multi family dwelling unit (apartment buildings with 5 or more dwelling units pay based on 5 dwelling units) for FY 2020 and FY 2021.

4.6. Customer Impacts

Raftelis completed an analysis to evaluate the impact of the proposed rate structure on customers with various water usage levels. The results of the COS analysis are shown in comparison to the District's Test Year rates. By comparing the changes to the Test Year in this section, the customer impact attributed to the COS adjustments can be shown. Section 5 contains the proposed FY 2020 and FY 2021 wastewater rates and bill impacts that incorporate the COS adjustments and updated revenue requirements for FY 2020 and FY 2021.

Table 4-4 shows the bill impacts for different customers with typical water usage for the Test Year.

Table 4-4: Typical Customers Wastewater Bill Impacts for Test Year

Customer Class	Monthly Flow (ccf)	FY 2017 Current Bill	FY 2017 Proposed Bill	Difference ($)	Difference (%)
SFR	6	$19.73	$19.15	($0.58)	-2.9%
MFR – Fourplex	25	$63.36	$59.35	($4.01)	-6.3%
Commercial – Office	50	$129.55	$129.62	$0.07	0.1%
Commercial – Restaurant	50	$253.05	$260.62	$7.57	3.0%
Industrial – Food Manufacturing	500	$7,255.55	$7,856.12	$600.57	8.3%

Note: Bill does not include the San Francisco Pollution Prevention Fee

Table 4-5 shows the impacts resulting from the Test Year proposed WWFC compared to the current WWFC.

Table 4-5: Wet Weather Facilities Charge Impacts for Test Year

Lot size (sq ft)	FY 2017 Current	FY 2017 Proposed	Difference ($)	Difference (%)
0-5,000	$94.10	$97.00	$2.90	3.1%
5,001-10,000	$147.00	$151.56	$4.56	3.1%
over 10,001	$336.00	$346.39	$10.39	3.1%

5. Proposed FY 2020 & FY 2021 Wastewater User Charges

To determine the FY 2020 and FY 2021 user charges, required revenue adjustments were made to the Test Year rates and charges based on the District's FY 2020 and FY 2021 budgets for development of FY 2020 and FY 2021 rates and charges presented in this section. The COS effort resulted in some adjustments to the District's individual rates that were presented in previous sections in comparison to the District's wastewater user charges for the Test Year. From the District's FY 2020 and FY 2021 budgeted operating, capital, and debt expenses, the FY 2020 and FY 2021 revenue requirements were established. The Raftelis model was used to calculate the FY 2020 and FY 2021 wastewater rates, combining the FY 2020 and FY 2021 increased revenue requirements with the results of the COS Study. The results of the cost of service study were incorporated into the proposed FY 2020 and FY 2021 user charges by adjusting the charges from the COS analysis to yield the FY 2020 and FY 2021 revenue requirements.

The District's proposed budgets for FY 2020 and FY 2021 do not contain detailed budgeted costs by function, so the Test Year COS results are adjusted to match the FY 2020 and FY 2021 revenue requirements based on the budget. The District does not anticipate that the distribution of expenses by function for FY 2020 and FY 2021 will be significantly different than the Test Year expenses.

This section documents the process and calculations made to determine the wastewater user charges for FY 2020 and FY 2021.

5.1. FY 2020 and FY 2021 Wastewater User Charges and Customer Impacts

The first step is to develop the current FY 2019 wastewater user charges based on the Test Year COS user charges. Table 5-1 shows the total FY 2019 revenue requirement, provided by the District, compared to the total Test Year revenue requirement as shown in Table 3-15.

Table 5-1: Wastewater Revenue Requirement for FY 2019

	FY 2017	FY 2019
Revenue Requirements		
O&M Expenses	$63,926,037	$71,535,499
Existing Debt Service	$33,301,178	$29,760,873
Proposed Debt Service	$0	$0
Admin Capital	$0	$0
Rate Funded Capital	$27,954,400	$41,807,600
Total Revenue Requirements	**$125,181,615**	**$143,103,972**
Revenue Offsets		
Resource Recovery	$11,904,249	$9,000,000
Property Taxes, less customer assistance	$4,514,980	$4,230,630
Ad Valorem Bond Levy	$2,865,215	$0
Interest	$485,439	$1,533,513
Laboratory Services	$4,210,262	$4,261,635
Reimbursements	$1,475,502	$1,442,000
Permit Fees	$1,592,767	$1,600,000
Capacity Charges	$0	$2,963,000
All Other Revenue		
BABS REBATE	$2,504,058	$2,500,000
PSL FEES	$1,126,722	$1,500,000
PGS ENERGY SALES	$900,014	$1,000,000
MISC	$494,820	$700,000
Transfer (to)/from Rate Stabilization Reserve (RSR)	$0	$0
Total Revenue Offsets	**$32,074,027**	**$30,730,778**
Adjustments		
Annual Cash Balance	$1,619,175	$11,121,645
Total Adjustments	**$1,619,175**	**$11,121,645**
Cost of Service to be Recovered from Rates	**$91,488,412**	**$101,251,548**
Difference (%)		**10%**

Since the FY 2019 revenue requirement is 10 percent higher than the Test Year revenue requirement, the Test Year COS user charges were increased by approximately the same percentage to calculate the COS adjusted FY 2019 user charges. Table 5-2 and Table 5-3 show the FY 2019 wastewater user charges for residential and non-residential customers, respectively, using the FY 2019 revenue requirement provided by the District.

Table 5-2: FY 2019 Cost of Service Adjusted Wastewater Rates - Residential

	FY 2017	FY 2019[15]	Difference (%)
Service Charge (per account) [A]	$6.12	**$6.75**	10%
Strength Charge (per dwelling unit) [B]	$6.37	**$7.03**	10%
Minimum monthly charge per household	$12.49	**$13.78**	10%
Plus: A flow charge per ccf (maximum of 9 ccf) [C]	$1.11	**$1.22**	10%
Minimum monthly charge at 0 units	$0.00	**$0.00**	
Maximum monthly charge at 9 units	$9.99	**$10.98**	10%
Total Residential Charge (A+B+C above)			
Minimum monthly charge	$12.49	**$13.78**	10%
Maximum monthly charge	$22.48	**$24.76**	10%
Average monthly charge at 6 ccf	$19.15	**$21.10**	10%

[15] Rates rounded to the nearest cent.

Table 5-3: FY 2019 Cost of Service Adjusted Wastewater Rates – Non-Residential

	FY 2017	FY 2019[16]	Difference (%)
Monthly Service Charge (per meter)	$6.12	**$6.75**	10%
Treatment charge including flow processing (per ccf of sewage discharge)			
Meat Products	$7.74	**$8.55**	10%
Slaughterhouses	$7.41	**$8.17**	10%
Dairy Product Processing	$6.07	**$6.71**	10%
Fruit and Vegetable Canning	$4.89	**$5.39**	10%
Grain Mills	$4.87	**$5.37**	10%
Bakeries (including Pastries)	$8.41	**$9.28**	10%
Sugar Processing	$4.81	**$5.31**	10%
Rendering Tallow	$14.61	**$16.10**	10%
Beverage Manufacturing & Bottling	$3.65	**$4.03**	10%
Specialty Foods Manufacturing	$15.70	**$17.35**	10%
Pulp and Paper Products	$4.18	**$4.60**	10%
Inorganic Chemicals Mfgr.	$5.38	**$5.92**	10%
Synthetic Material Manufacturing	$1.26	**$1.39**	10%
Drug Manufacturing	$2.71	**$2.99**	10%
Cleaning and Sanitation Products	$5.48	**$6.05**	10%
Paint Manufacturing	$10.57	**$11.67**	10%
Ink and Pigment Manufacturing	$3.82	**$4.22**	10%
Leather Tanning and Finishing	$14.60	**$16.12**	10%
Earthenware Manufacturing	$2.97	**$3.27**	10%
Primary Metals Manufacturing	$2.35	**$2.59**	10%
Metal Products Fabricating	$1.38	**$1.51**	10%
Drum and Barrel Manufacturing	$14.86	**$16.42**	10%
Metal Coating	$1.49	**$1.64**	10%
Air Transportation	$1.96	**$2.16**	10%
Food Service Establishments	$5.09	**$5.61**	10%
Apartment Buildings (5 or more units)	$2.47	**$2.72**	10%
Hotels, Motels with Food Service	$3.66	**$4.03**	10%
Commercial Laundries	$3.29	**$3.63**	10%
Coin Operated Laundromats	$2.47	**$2.72**	10%
Industrial Laundries	$9.34	**$10.32**	10%
Laboratories	$1.77	**$1.95**	10%
Automobile Washing and Polishing	$2.34	**$2.58**	10%
Hospitals	$2.25	**$2.48**	10%
Schools	$1.66	**$1.82**	10%
All Other BCC (includes dischargers of only segregated domestic wastes from sanitary conveniences)	$2.47	**$2.72**	10%

Table 5-4 shows the FY 2019 Wet Weather Facilities Charge, using the FY 2019 revenue requirement provided by the District.

[16] Rates rounded to the nearest cent.

Table 5-4: FY 2019 Cost of Service Adjusted Wet Weather Facilities Charge

Lot Size (sq ft)	FY 2017	FY 2019[17]	Difference (%)
0 – 5,000	$97.00	**$106.96**	10%
5,001 – 10,000	$151.56	**$167.10**	10%
>10,001	$346.39	**$381.92**	10%

Table 5-5 shows the revenue requirement for FY 2019 from Table 5-1 and the revenue requirements for FY 2020 and FY 2021 based on the District's proposed FY 2020 and FY 2021 budgets for the wastewater enterprise.

Table 5-5: Wastewater Revenue Requirement for FY 2020 and FY 2021

	FY 2019	FY 2020	FY 2021
Revenue Requirements			
O&M Expenses	$71,535,499	$75,091,889	$78,579,852
Existing Debt Service	$29,760,873	$30,228,258	$29,839,038
Proposed Debt Service	$0	$0	$0
Admin Capital	$0	$0	$0
Rate Funded Capital	$41,807,600	$48,475,000	$46,019,350
Total Revenue Requirements	**$143,103,972**	**$153,795,147**	**$154,438,240**
Revenue Offsets			
Resource Recovery	$9,000,000	$10,000,000	$10,000,000
Property Taxes, less customer assistance	$4,230,630	$5,030,000	$5,155,750
Full Property Taxes, including amount used for customer assistance	*$4,630,630*	*$5,430,000*	*$5,555,750*
Ad Valorem Bond Levy	$0	$0	$0
Interest	$1,533,513	$2,374,306	$2,082,768
Laboratory Services	$4,261,635	$4,389,484	$4,521,169
Reimbursements	$1,442,000	$1,485,260	$1,529,818
Permit Fees	$1,600,000	$1,600,000	$1,600,000
Capacity Charges	$2,963,000	$4,000,000	$4,000,000
All Other Revenue			
BABS REBATE	$2,500,000	$2,500,000	$2,500,000
PSL FEES	$1,500,000	$1,500,000	$1,500,000
PGS ENERGY SALES	$1,000,000	$1,000,000	$1,000,000
MISC	$700,000	$700,000	$700,000
Transfer (to)/from Rate Stabilization Reserve (RSR)	$0	$0	$0
Total Revenue Offsets	**$30,730,778**	**$34,579,050**	**$34,589,505**
Adjustments			
Annual Cash Balance	$11,121,645	$13,603,218	$10,011,341
Total Adjustments	**$11,121,645**	**$13,603,218**	**$10,011,341**
Cost of Service to be Recovered from Rates	**$101,251,548**	**$105,612,879**	**$109,837,394**
Revenue to be Collected from Rates [18]	*$100,851,548*	*$105,212,879*	*$109,437,394*
Difference (%)		**4%**	**4%**

[17] Rates rounded to the nearest cent.
[18] The revenue collected from rates is lower due to the Customer Assistance Discount.

The FY 2020 revenue requirement is 4 percent higher than the FY 2019 revenue requirement and the FY 2021 revenue requirement is 4 percent higher than the FY 2020 revenue requirement. Based on the percent increase in revenue requirements for FY 2020 and FY 2021, the FY 2019 COS adjusted wastewater user charges, shown in Table 5-2 through Table 5-4, need to be increased by the same percentages in FY 2020 and in FY 2021 to meet the rate revenue requirements[19].

Table 5-6 and Table 5-7 show the proposed FY 2020 and FY 2021 wastewater rates for residential and non-residential customers, respectively.

Table 5-6: FY 2020 and FY 2021 Wastewater Rates - Residential

	FY 2019	FY 2020[20]	Difference (%)	FY 2021[21]	Difference (%)
Service Charge (per account)	$6.75	**$7.02**	4%	**$7.30**	4%
Strength Charge (per dwelling unit)	$7.03	**$7.31**	4%	**$7.60**	4%
Minimum monthly charge per household	$13.78	**$14.33**	4%	**$14.90**	4%
Plus: A flow charge per ccf (maximum of 9 ccf)	$1.22	**$1.27**	4%	**$1.32**	4%
Minimum monthly charge at 0 units	$0.00	**$0.00**		**$0.00**	
Maximum monthly charge at 9 units	$10.98	**$11.43**	4%	**$11.88**	4%
Total Residential Charge (A+B+C above)					
Minimum monthly charge	$13.78	**$14.33**	4%	**$14.90**	4%
Maximum monthly charge	$24.76	**$25.76**	4%	**$26.78**	4%
Average monthly charge at 6 ccf	$21.10	**$21.95**	4%	**$22.82**	4%

[19] Revenue Requirements for FY 2020 and FY 2021 were developed and provided by the District.
[20] Rates rounded to the nearest cent.
[21] Rates rounded to the nearest cent.

Table 5-7: FY 2020 and FY 2021 Cost of Service Adjusted Wastewater Rates – Non-Residential

	FY 2019	FY 2020[22]	Difference (%)	FY 2021[23]	Difference (%)
Monthly Service Charge (per meter)	$6.75	**$7.02**	4%	**$7.30**	4%
Treatment charge including flow processing (per ccf of sewage discharge)					
BCCs					
Meat Products	$8.55	**$8.90**	4%	**$9.24**	4%
Slaughterhouses	$8.17	**$8.50**	4%	**$8.83**	4%
Dairy Product Processing	$6.71	**$6.98**	4%	**$7.25**	4%
Fruit and Vegetable Canning	$5.39	**$5.61**	4%	**$5.83**	4%
Grain Mills	$5.37	**$5.58**	4%	**$5.80**	4%
Bakeries (including Pastries)	$9.28	**$9.65**	4%	**$10.03**	4%
Sugar Processing	$5.31	**$5.53**	4%	**$5.74**	4%
Rendering Tallow	$16.10	**$16.74**	4%	**$17.40**	4%
Beverage Manufacturing & Bottling	$4.03	**$4.19**	4%	**$4.36**	4%
Specialty Foods Manufacturing	$17.35	**$18.05**	4%	**$18.75**	4%
Pulp and Paper Products	$4.60	**$4.79**	4%	**$4.98**	4%
Inorganic Chemicals Mfgr.	$5.92	**$6.16**	4%	**$6.40**	4%
Synthetic Material Manufacturing	$1.39	**$1.44**	4%	**$1.50**	4%
Drug Manufacturing	$2.99	**$3.11**	4%	**$3.23**	4%
Cleaning and Sanitation Products	$6.05	**$6.30**	4%	**$6.54**	4%
Paint Manufacturing	$11.67	**$12.14**	4%	**$12.61**	4%
Ink and Pigment Manufacturing	$4.22	**$4.39**	4%	**$4.56**	4%
Leather Tanning and Finishing	$16.12	**$16.77**	4%	**$17.43**	4%
Earthenware Manufacturing	$3.27	**$3.40**	4%	**$3.53**	4%
Primary Metals Manufacturing	$2.59	**$2.69**	4%	**$2.80**	4%
Metal Products Fabricating	$1.51	**$1.57**	4%	**$1.64**	4%
Drum and Barrel Manufacturing	$16.42	**$17.08**	4%	**$17.74**	4%
Metal Coating	$1.64	**$1.71**	4%	**$1.77**	4%
Air Transportation	$2.16	**$2.25**	4%	**$2.34**	4%
Food Service Establishments	$5.61	**$5.83**	4%	**$6.06**	4%
Apartment Buildings (5 or more units)	$2.72	**$2.83**	4%	**$2.94**	4%
Hotels, Motels with Food Service	$4.03	**$4.19**	4%	**$4.36**	4%
Commercial Laundries	$3.63	**$3.77**	4%	**$3.92**	4%
Coin Operated Laundromats	$2.72	**$2.83**	4%	**$2.94**	4%
Industrial Laundries	$10.32	**$10.73**	4%	**$11.15**	4%
Laboratories	$1.95	**$2.02**	4%	**$2.11**	4%
Automobile Washing and Polishing	$2.58	**$2.68**	4%	**$2.79**	4%
Hospitals	$2.48	**$2.57**	4%	**$2.68**	4%
Schools	$1.82	**$1.89**	4%	**$1.97**	4%
All Other BCC (includes dischargers of only segregated domestic wastes from sanitary conveniences)	$2.72	**$2.83**	4%	**$2.94**	4%

[22] Rates rounded to the nearest cent.
[23] Rates rounded to the nearest cent.

Table 5-8 shows the WWFC for FY 2020 and FY 2021. The increases mirror those of the wastewater increases, i.e. 4 percent per year.

Table 5-8: FY 2019 Cost of Service Adjusted Wet Weather Facilities Charge

Lot Size (sq ft)	FY 2019	FY 2020	Difference (%)	FY 2021	Difference (%)
0 – 5,000	$106.96	**$111.24**	4%	**$115.70**	4%
5,001 – 10,000	$167.10	**$173.78**	4%	**$180.74**	4%
>10,001	$381.92	**$397.20**	4%	**$413.10**	4%

The resulting customer bill impacts, shown in Table 5-9 and Table 5-10, reflect the increases described previously. Table 5-9 shows the bill impacts for different customers with typical water usage for FY 2020. Bill impacts for FY 2021 are approximately 4 percent more than those shown below.

Table 5-9: Typical Customers' Wastewater Bill Impacts for FY 2020

Customer Class	Monthly Flow (ccf)	FY 2019 Current Bill	FY 2020 Proposed Bill	Difference ($)	Difference (%)
SFR	6	$21.75	$21.95	$0.20	0.9%
MFR – Fourplex	25	$69.84	$68.01	($1.83)	-2.6%
Commercial – Office	50	$142.62	$148.52	$5.90	4.1%
Commercial – Restaurant	50	$279.62	$298.52	$18.90	6.8%
Industrial – Food Manufacturing	500	$8,001.12	$9,032.02	$1,030.90	12.9%

Note: Bill does not include Pollution Prevention Charge

Table 5-10 shows the impacts for FY 2020 resulting from the proposed WWFC compared to the FY 2019 WWFC. Bill impacts for FY 2021 are approximately 4 percent more than those shown below.

Table 5-10: Wet Weather Facilities Charge Impacts for FY 2020

Lot size (sq ft)	FY 2019 Current	FY 2020 Proposed	Difference ($)	Difference (%)
0-5,000	$103.74	$111.24	$7.50	7.2%
5,001-10,000	$162.06	$173.78	$11.72	7.2%
over 10,001	$370.44	$397.20	$26.76	7.2%

6. Part II: Wastewater Capacity Fee Study

6.1. Introduction

In addition to wastewater rates, the District has a Wastewater Capacity Fee (WCF) for new or upsized connections. The purpose of these fees is to pay for the connections share of the costs of existing and/or new wastewater facilities. These fees are designed to be proportional to the demand placed on the systems by the new or expanded connections. The recommended capacity fees for the District do not exceed the estimated reasonable costs of providing the facilities for which they are collected and are of proportional benefit to the property being charged. The existing wastewater capacity fees were last updated in 2013 and were based on the Buy-In methodology to ensure that new customers or existing customers increasing their capacity demand paid their fair share of treatment capacity costs. The fee has been updated over the past five years to account for the effects of inflation but has not been updated to account for increased system value.

6.2. Legal and Economic Framework

6.2.1. LEGAL FRAMEWORK

Unlike the wastewater service charges, the WCF is not subject to Proposition 218. Government Code Section 66013 contains requirements specific to wastewater capacity fees. In addition, procedural requirements for adopting or protesting capacity fees, pursuant to Section 66013, are contained in Sections 66016, 66022, and 66023 of the Government Code. The most pertinent part of Section 66013 states:

> *"Notwithstanding any other provision of law, when a local agency imposes fees for water connections or sewer connections, or imposes capacity charges, those fees or charges* ***shall not exceed the estimated reasonable cost of providing the service*** *for which the fee or charge is imposed…"* (emphasis added)

The WCF is also subject to the requirements set forth by Proposition 26, which amended Section 1 of Article XIIIC, and requires the District to show the amount charged is not a tax by not exceeding the reasonable amount required to provide the service, as stated in Section 1(e)(2):

> "*A charge imposed for a specific government service or product provided directly to the payor that is not provided to those not charged, and which does not exceed the reasonable costs to the local government of providing the service or product."*

The District's WCF is structured to meet the requirements of these laws, and to recover the reasonable cost of the facilities necessary to provide capacity for new, or significant changes to existing, sewer connections.

6.2.2. ECONOMIC FRAMEWORK

The basic economic philosophy behind capacity fees is that the costs of providing service should be paid for by those that receive utility from the product. In order to effect fair distribution of the value of the system, the charge should reflect a reasonable estimate of the cost of providing capacity to new connections, or to customers seeking to upsize an existing connection, and not unduly burden existing users through a comparable rate increase.

Accordingly, many utilities make this philosophy one of their primary guiding principles when developing their capacity fee structure.

The philosophy that service should be paid for by those that receive utility from the product is often referred to as "growth-should-pay-for-growth." The principal is summarized in the American Water Works Association (AWWA) Manual M26, Water Rates and Related Charges:

> *"The purpose of designing customer-contributed-capital system charges is to prevent or reduce the inequity to existing customers that results when these customers must pay the increase in water rates that are needed to pay for added plant costs for new customers. Contributed capital reduces the need for new outside sources of capital, which ordinarily has been serviced from the revenue stream. Under a system of contributed capital, many water utilities are able to finance required facilities by use of a 'growth-pays-for-growth' policy."*

This principle, in general, also applies to wastewater and storm drainage systems. In this excerpt, customer-contributed-capital system charges are equivalent to capacity fees.

6.3. Methodology

There are two primary steps in calculating capacity fees: (1) determining the cost of capital required to serve new or upsized connections or accommodate an increase in density generated by in-fill projects, and (2) allocating those costs equitably to various types of connections based on the demand placed on the utility system.

There are several available methodologies for calculating capacity fees. The various approaches have evolved largely around the basis of changing public policy, legal requirements, and the unique and special circumstances of every local agency. The District uses the widely accepted Buy-In Method to calculate their capacity fees.

6.3.1. BUY-IN METHOD

The Buy-In approach rests on the premise that new or upsized connections are entitled to service at the same price as existing connections. Under this approach, new or upsized connections pay only an amount equal to their proportional share of the current system value, either using the original cost or replacement cost as the valuation basis and either netting the value of depreciation or not. This net investment, or value of the system, is then divided by the current demand of the system to determine the Buy-In cost per equivalent unit.

For example, if the existing system has 100 units of average usage and the new connector uses an equivalent unit, then the new customer would pay 1/100 of the total value of the existing system. By contributing this capacity fee, the new connector has bought into the existing system. The user has effectively acquired a financial position on par with existing customers and will face future capital challenges on equal financial footing with those customers. This approach is suited for agencies that either 1) have built most of their facilities and only a small portion of future facilities are needed for build-out, 2) the agency doesn't have an adopted long-term capital improvement plan, or 3) the "build-out" date is so far out in the future that it is difficult to accurately project growth and required facilities with precision. Figure 6-1 shows the framework for calculating the Buy-in Capacity Fee.

Figure 6-1: Formula for Buy-In Approach

6.3.2. ASSET VALUATION APPROACHES

There are various methods employed to estimate the asset value of the existing facilities and derive an updated capacity fee based on the existing asset value. The principal method used by the District to value its existing assets is replacement cost less depreciation.

- **Replacement Cost Less Depreciation (RCLD).** Considerations of the current value of wastewater facilities may also be materially affected by the effects of age and depreciation. Depreciation takes into account the anticipated losses in plant value caused by wear and tear, decay, inadequacy, and obsolescence. To provide appropriate recognition of the effects of depreciation on existing wastewater facilities, the replacement cost valuation measure can be expressed on an RCLD basis. This measure is similar to other valuation methods, with the exception that accumulated depreciation is computed for each asset account based upon its age or condition and deducted from the respective total replacement cost to determine the RCLD measure of system value.

6.4. Current Wastewater Capacity Fee

New residential customers are currently charged a WCF per dwelling unit based on the estimated maximum indoor water consumption per dwelling unit. On the other hand, for non-residential customers, the District's current procedures for calculating fees are complicated, require significant staff time to administer, and are difficult for customers to understand.

Currently, the WCF for non-residential customers is calculated by estimating the monthly maximum wastewater discharge volume and multiplying it by the WCF rate for the corresponding Business Classification Code (BCC) for that customer. The method for determining the maximum discharge volume is a complicated process and involves multiple methods based on number of fixtures, average daily water use per occupant, building size, or applicant provided estimates. Results are then compared, and the most reasonable maximum wastewater discharge value is selected. This process requires significant staff time and does not allow non-residential customers to perform a self-assessment of possible WCF prior to applying for service. Therefore, the District is seeking to simplify the method used for calculating the WCF for non-residential customers and meet the following objectives:

1. Review the existing WCF and update as needed.
2. Increase transparency and simplify the administration of the WCF.

These objectives will provide transparency with District customers and allow prospective new customers the ability to estimate their potential WCF for their project. Additionally, they will reduce staff time required to calculate the WCF for new non-residential project applications and minimize or eliminate the need for periodic evaluations of a customer's WCF as business use assumptions used in the initial WCF calculation change.

6.5. Proposed Wastewater Capacity Fee

6.5.1. PROPOSED METHOD: BUY-IN APPROACH

The District's wastewater system has available capacity within the existing system to serve remaining growth under existing regulations. Therefore, the Buy-In approach was used to determine the proposed capacity fees for the wastewater utility.

6.5.2. VALUE OF THE SYSTEM

The first step in determining the Buy-In capacity fee is to determine the value of the existing system. As mentioned above, there are several methods of determining the current value of assets, but, for the purposes of this Capacity Fee Study, RCLD was used to account for today's replacement cost for system improvements, while acknowledging the remaining useful life of system facilities. To accomplish this, the District provided fixed asset records on the original cost of the system. Replacement cost is estimated by adjusting the original costs to reflect what might be expected if a similar asset were constructed today. This was achieved by escalating the original construction costs by a construction cost index. Raftelis utilized the Engineering News-Record's average Construction Cost Index for 20-cities (CCI) which reflects the average costs of a particular basket of construction goods (See Appendix D). Raftelis used a CCI value of 10,737 for 2017 to estimate the replacement costs and to update the FY 2019 WCF. Accumulated replacement cost depreciation was determined by escalating the accumulated depreciation for each asset by the appropriate CCI. The accumulated depreciation was subtracted from the replacement cost to determine the current value of the assets using the RCLD methodology and appropriately reflects the use of the system by the existing customers. Table 6-1 shows the wastewater assets at original cost, escalated into 2017 dollars (i.e. replacement cost), replacement cost accumulated depreciation, and assets adjusted for depreciation (RCLD). A summary of assets by category can be found in Table 3-10[24].

[24] A detail of the District's fixed assets can be found in Appendix C.

Table 6-1: Wastewater Assets

Asset Class	Original Cost	Replacement Cost (A)	RC Depreciation (B)	Total Assets (RCLD) (A - B)
Chlorination	$4,446,780	$8,540,747	$5,573,887	$2,966,859
Effluent	$65,663,726	$182,912,843	$125,112,768	$57,800,075
General	$143,927,224	$287,890,054	$156,532,738	$131,357,316
Grit	$19,834,612	$43,162,452	$26,238,500	$16,923,952
Influent	$44,958,489	$87,805,442	$54,962,173	$32,843,269
Interceptor	$234,814,953	$631,706,603	$344,050,490	$287,656,113
Secondary	$80,177,795	$214,112,283	$140,348,216	$73,764,068
PGS	$94,548,798	$142,097,199	$64,654,705	$77,442,495
Primary	$11,143,586	$17,734,903	$6,744,008	$10,990,895
Sludge	$199,704,239	$296,325,729	$117,573,403	$178,752,326
Wet Weather	$182,998,207	$393,699,323	$216,545,452	$177,153,871
Total Assets	**$1,082,218,409**	**$2,305,987,576**	**$1,258,336,340**	**$1,047,651,236**

Additionally, the FY 2017 Working Capital Reserve and Capital Reserve beginning balances of $17,700,000 and $56,475,000, respectively, were included in the final value of the system as shown in Table 6-2. It is reasonable and appropriate to include the balance of the capital replacement reserves because these reserves have been built up over time by existing rate customers and will be used to repair or replace aging infrastructure, thereby contributing to the value of the system. To arrive at the total system value, the FY 2017 total debt service principal balances totaling $420,207,400 were subtracted from the sum of the Wastewater System value and the Reserve balance.

Table 6-2: Total System Value

Total System Value	
Wastewater System Value (RCLD)	$1,047,651,236
Reserve Balance	$74,175,000
Less Total Outstanding Principal	$420,207,400
Total System Value	**$701,618,836**

The wastewater assets from Table 6-1 were then allocated to cost components related to I&I, Flow, COD, and TSS using the percent allocations determined in the COS Study shown in Table 3-14. However, an additional step is required to reallocate the value of I&I assets since customers are not charged based on I&I flows. This was done by spreading the $465,802,474 in I&I assets proportionally to the other cost components of Flow, COD, and TSS. This results in revised allocation percentages to Flow, COD, and TSS as shown at the bottom of Table 6-3.

Table 6-3: Wastewater System Value Allocation

	I&I	Flow	COD	TSS	Total
% Allocation (from **Table 3-14**)	44.5%	22.3%	11.9%	21.4%	100.0%
Wastewater System Value (RCLD)	$465,802,474	$233,849,995	$124,198,140	$223,800,627	$1,047,651,236
Reallocate I&I	($465,802,474)	$187,209,999	$99,427,557	$179,164,918	$0
Wastewater System Value	$0	$421,059,994	$223,625,698	$402,965,544	$1,047,651,236
% Allocated	**0%**	**40%**	**21%**	**38%**	**100%**

These percent allocations can then be applied to the Total System Value from Table 6-2 of $701,618,836 to determine cost allocations for Flow, COD, and TSS.

Table 6-4: Total System Value Allocation

% Allocation		Cost Allocation
Flow	40%	$281,986,612
COD	21%	$149,763,582
TSS	38%	$269,868,642
Total	**100%**	**$701,618,836**

6.5.3. SYSTEM CAPACITY

The second step in calculating the Buy-In WCF is to determine the demand or capacity of the system. Dividing the value of the system by the capacity provides a unit cost for the capacity fee. Here, the wastewater system capacity in terms of Flow in ccf, COD in pounds, and TSS in pounds will be used to determine the fee. The FY 2017 net units to the treatment plant, less I&I and trucked waste at headworks, are shown in Table 6-5.

Table 6-5: System Capacity

FY 2017 Net Units to Treatment Plant	
Flow (ccf)	20,983,276
COD (lbs)	106,264,585
TSS (lbs)	41,790,303

6.5.4. PROPOSED WASTEWATER CAPACITY FEES

The WCF for both residential and non-residential customers will be calculated based on the unit costs for Flow, COD, and TSS. The calculation of the unit costs for the Buy-In wastewater capacity fees are shown in Table 6-6. The unit costs are calculated by dividing the system values for Flow, COD, and TSS from Table 6-4 by the net plant influent in Table 6-5 for the corresponding cost component. The proposed capacity fees are based on Flow in ccf per year and COD and TSS in pounds per year. WCFs can then be calculated using the flow and strength data from the COS analysis for both residential and non-residential customers.

Table 6-6: WCF Updated FY 2019 Unit Costs

	System Value (A)	Net Plant Influent (B)	Updated FY 2019 Unit Cost (C) = (A ÷ B)	Current FY 2019 Unit Cost
Flow	$281,986,612	20,983,276	**$13.44** per ccf	**$15.99** per ccf
COD	$149,763,582	106,264,585	**$1.41** per lb	**$1.31** per lb
TSS	$269,868,642	41,790,303	**$6.46** per lb	**$6.33** per lb

6.5.4.1. Residential

Residential customers will continue to be charged a WCF per dwelling unit. The calculation of the WCF for a Single-Family Residence is shown in Table 6-7. The proposed capacity fee is for one dwelling unit and assumes a monthly flow of 7 ccf (84 ccf per year). Seven (7) ccf per month is the District's average indoor residential water usage as determined during the Water Utility's COS study in 2015. Domestic strength concentrations of 713 mg/l COD and 300 mg/l TSS from the wastewater COS Study were used to calculate the pounds per year of COD and TSS.

Table 6-7:Updated FY 2019 Single-Family Residence WCF

Updated FY 2019 Capacity Fee Calculation			Current FY 2019 Capacity Fee
Flow (ccf/year)	84	$1,128.96	
COD (lbs/year)	374	$527.34	
TSS (lbs/year)	157	$1,014.22	
Total SFR WCF		**$2,671**[25]	**$2,610**

The Single-Family Residence WCF can be multiplied by the number of dwelling units for Multi-Family Residence accounts to calculate their WCF.

6.5.4.2. Non-Residential

To increase transparency and uniformity, the District has decided to utilize the meter size to estimate annual average wastewater use for the WCF for non-residential customers with meters up to 1½ inches in size. This estimated wastewater discharge volume will be combined with an assigned strength category of low, medium, or high, based on the customers' BCC. For non-residential customers with meter sizes greater than 1½ inches, the District will determine the annual average use on a case by case basis. This replaces the current complex process of calculating the estimated wastewater discharge for each individual applicant based on business and facility attributes. The revised process should significantly reduce the amount of staff time necessary to determine the WCF, reduce the potential for error, and increase transparency for customers.

First, the yearly flow by meter size for meters 1½ inches and smaller was determined based on the non-residential yearly average wastewater use for each meter size from the FY 2017 wastewater consumption data (Table 6-8)[26]. This process is similar to how yearly flow by meter size is determined for the District's Water System Capacity Charge (SCC).

[25] Fee rounded to the nearest dollar.
[26] A detail of the calculation of non-residential yearly average use by meter size can be found in Appendix E.

Table 6-8: Yearly Average Wastewater Use by Meter size

Meter Size	Yearly Average Use (ccf)	Approximate Monthly Average Use (ccf)[27]
5/8 inch	132	11
3/4 & 1 inch	347	29
1 ½ inch	676	57

Second, non-residential strength categories of Low, Medium, and High were based on the range of COD and TSS loading concentrations from various BCCs contained in the District's treatment rate schedule and divided into categories as shown in Table 6-9[28]. Each non-residential BCC was then placed into one of the three strength categories based on the combined estimated strengths for COD and TSS from the wastewater COS analysis. For example, Hospitals (BCC 8060) have a COD strength of 517 mg/L and a TSS strength of 270 mg/l. The combined strength value is 787, which would fall into the Low category[29]. The "Low" category comprises domestic and other similarly low-strength customers with a combined COD and TSS of 1,600 mg/l or less. The "High" category comprises high-strength industrial and food processing customers, such as Rendering Tallow (BCC 2077), Bakeries (BCC 2050), and Dairy Product Processing (BCC 2020). The "Medium" category comprises those customers with strength between 1,601 and 5,000, such as Food Service Establishments (BCC 5812).

Table 6-9: Non-Residential Strength Categories

Non-Residential Strength Category	Range	
Low	0	1,600
Medium	1,601	5,000
High	5,001	999,999

Weighted average strengths for COD and TSS were then determined for each strength category using actual FY 2017 flows into the MWWTP as shown in Table 6-10.

Table 6-10: Weighted Average Strengths

Non-Residential Strength Category	Weighted Average COD Strength (mg/l)	Weighted Average TSS Strength (mg/l)
Low	690	262
Medium	1,958	749
High	8,259	820

The weighted average strengths by category and the flow by meter size were then used to calculate the non-residential WCF. The calculation of the Flow Charge for non-residential accounts with meter sizes of 1½ inches or smaller is shown in Table 6-11.

[27] Rounded up to the nearest ccf.
[28] Strength ranges were determined based on District input.
[29] Details of each BCC and its corresponding total strength and strength category can be found in Appendix E.

Table 6-11: Non-Residential Updated FY 2019 Flow Charge

Meter Size	Yearly Average Use (ccf) from Table 6-8 [A]	Flow Unit Cost from Table 6-6 [B]	Flow Charge [C] = [A x B]
5/8 inch	132	$13.44 per ccf	$1,774.08
3/4 & 1 inch	347	$13.44 per ccf	$4,663.68
1 ½ inch	676	$13.44 per ccf	$9,085.44

The COD and TSS charges are show in Table 6-12 and Table 6-13, respectively. These charges are calculated using the unit cost shown in Table 6-6, the weighted average strengths from Table 6-10, the yearly average use by meter size shown in Table 6-8, and conversion factors to convert from ccf to million gallons (MG) and mg/L to lbs/MG.

Table 6-12: Non-Residential Updated FY 2019 COD Charge

Meter Size	Strength Category		
	Low	Medium	High
5/8 inch	$801	$2,274	$9,596
3/4 & 1 inch	$2,107	$5,980	$25,225
1 ½ inch	$4,105	$11,648	$49,141

Table 6-13: Non-Residential Updated FY 2019 TSS Charge

Meter Size	Strength Category		
	Low	Medium	High
5/8 inch	$1,395	$3,986	$4,367
3/4 & 1 inch	$3,676	$10,472	$11,473
1 ½ inch	$7,158	$20,407	$22,352

The charges from Table 6-11, Table 6-12, and Table 6-13 are then combined to determine the total non-residential WCF by meter size and strength category as shown in Table 6-14. A direct comparison cannot be made to the current FY 2019 Non-Residential WCF by meter size because the current WCF process does not consider meter size when calculating the fee assessed to new non-residential applicants. The WCF will be calculated on a case by case basis for non-residential customers with meters that are 2 inches or larger.

Table 6-14: Non-Residential Updated FY 2019 WCF[30]

Meter Size	Strength Category		
	Low	Medium	High
5/8 inch	$3,970	$8,034	$15,738
3/4 & 1 inch	$10,446	$21,115	$41,362
1 ½ inch	$20,348	$41,141	$80,578

This proposed method of calculating the WCF for non-residential customers using the yearly average wastewater use based on meter size and assigning each BCC a strength category of Low, Medium, or High will provide transparency to the majority of non-residential customers and allow them the ability to estimate their potential WCF (for meter sizes less than 2 inches), will reduce the amount of staff time required to determine the WCF for

[30] Fee rounded to the nearest dollar for table, for administrative simplicity the District rounds to the nearest ten dollars for published WCF.

new non-residential customers, and will minimize the need for the review of a customer's WCF as business use assumptions change.

6.5.5. FY 2020 WASTEWATER CAPACITY FEE

Using the Engineering News-Record's average CCI for 20-cities for 2018, the proposed FY 2020 WCFs are calculated by escalating the updated FY 2019 WCF unit charges as shown in Table 6-15, Table 6-16, and Table 6-17.

Table 6-15: Proposed FY 2020 WCF Unit Costs

	Unit Cost
Flow	**$13.85** per ccf
COD	**$1.45** per lb
TSS	**$6.66** per lb

Table 6-16: Proposed FY 2020 Single-Family Residence WCF

Capacity Fee Calculation		
Flow (ccf/year)	84	$1,163.40
COD (lbs/year)	374	$542.30
TSS (lbs/year)	157	$1,045.62
Total SFR WCF		**$2,752**[31]

Table 6-17: Proposed FY 2020 Non-Residential WCF[32]

Meter Size	Strength Category		
	Low	Medium	High
5/8 inch	$4,090	$8,277	$16,214
3/4 & 1 inch	$10,762	$21,754	$42,614
1 ½ inch	$20,964	$42,386	$83,017

Raftelis recommends the District adjust the WCFs annually to keep pace with inflation for capital assets by applying the Engineering News Record CCI.

6.5.6. WCF CREDIT WHEN APPLICANT REQUESTS EXPANDING EXISTING SERVICE

Per the District's policy, customers will receive a credit based on the WCF previously paid for service at the property. The value of the WCF credit will be determined using the flow and strength assumed in the original WCF and updated using the current WCF schedule (for flow and strength). For properties on which no WCF was paid, customers will be granted a credit for the existing use. For existing meters 1½ inches and smaller, the WCF credit will be calculated based on the current WCF schedule for the existing meter size and strength. For existing meters over 1½ inches, the WCF credit will be calculated based on the most recent 10 years of usage and strength

[31] Fee rounded to the nearest dollar for table, for administrative simplicity the District rounds to the nearest ten dollars for published WCF.
[32] Fee rounded to the nearest dollar for table, for administrative simplicity the District rounds to the nearest ten dollars for published WCF .

for the existing meter, provided that this value is not less than the value indicated in the schedule for the 1½ inch meter. If the account is subject to an Estimation Permit, the usage credit will consider diversion.

Appendices

Appendix A – Wastewater Strength Survey

California WW Agencies	Non-Residential Categories	Number of Rate Classifications	$/Unit	Strength Factors	Additional Comments
San Francisco PUC	Single	1	$/ccf	COD & SS	Monthly service charge, flow charge, charge per pound of COD, SS, and Oil & Grease (using SIC standard loadings if no sampling)
LA City Sanitation	Single	1	$/ccf	N/A	Only charge based on flow, Commercial discharge = 93% of winter water use, can apply for adjustment for low strength
Sanitation Districts of LA County	Business Type	45	$/SU	COD & SS	Charge per Sewage Unit (SFR = 1 unit) using mean loadings per business type; Industrial - $/MGY for flow, $/1,000 lbs for COD & SS
Central Contra Costa Sanitary District	Business Type	22	$/ccf	BOD & SS	Flow charge per business type; Flow charge per student for schools; Industrial – Fixed charge, $/ccf for flow, $/1,000 lbs for BOD & SS)
Union Sanitary District	Business Type	5	$/kgal	COD & SS	Divided into strong, moderate, weak, or type of restaurant; Industrial - $/kgal for flow, $/1,000 lbs for COD & SS
San Jose	Business Type	38	$/ccf	BOD, SS, NH_3	Flow charge per business type; Industrial – $/ccf for flow, $/1,000 lbs for BOD, SS, & NH_3, and annual charges for capacity required
Sacramento Regional County Sanitation District	Business Type	43	$/ESD	BOD, SS, TKN, Pathogens	Charge per Equivalent Single-Family Dwelling (SFR = 1 unit) using mean loadings per business type; Industrial - $/MG for flow & pathogens, $/1,000 lbs for BOD & SS
Santa Monica	Strength Range	7	$/ccf	BOD & SS	Divided into low to high ranges, churches, institutional, schools, or industrial
Out-of-State WW Agencies					
Phoenix, AZ	Business Type	10	$/ccf	COD & SS	All users assessed a flat environmental charge ($/ccf) and a flow charge per business type; Industrial - $/ccf for flow, COD, SS, and an Industrial Pretreatment Monitoring Charge
Salt Lake City, UT	Strength Range	7	$/ccf	COD, BOD, SS	Divided into classes with specific ranges & charged per ccf for flow, BOD, & SS; High strength (>1,800 mg/l) - $/lb of COD, BOD, & SS
Renewable Water Resources, SC	Single	1	$/kgal	BOD & SS	Monthly service charge & flow charge based on commercial or industrial, Per lb surcharge for high strength users (>250 mg/l of BOD or SS)
Little Rock Water Reclamation Authority, AR	Single	1	$/ccf	COD & SS	Monthly service charge & flow charge based on inside or outside city limits; Per lb surcharge for high strength users (>600 mg/l of SS, >50 mg/l of oil & grease, or >960 mg/l COD)

Non-Residential Categories

1. Business Type – Non-residential customers are divided into groups based on the type of business and assumed strengths.
2. Single – Non-residential customers are all placed in a single category.
3. Strength Range – Non-residential customers are divided into groups based on a range of strengths.

Appendix B – Detailed O&M Expenses

O&M Expenses by Function

O&M Expenses Info		Function	FY 2017
1002	Maintain Interceptor Facilites	Interceptor	$830,618
1003	Operate Interceptor Facilities	Interceptor	$1,952,615
1004	Maintain Resrce Recovery Fclty	R2	$512,055
1005	Operate Resrce Recovery Fclty	R2	$351,531
1012	Maint Main Wwtp Wet Weathr Fac	Wet	$266,273
1123	Operate Inflnt-Efflnt Facilits	Influent Op	$6,732,235
1124	Maintn Inflnt-Efflnt Facilits	Influent Mtn	$797,026
1221	Operate Prim Trtmnt Facilities	Primary Op	$21,814
1222	Maintn Prim Trtmnt Facilities	Primary Mtn	$442,219
1223	Public Plant Tours	Overhead	$61,691
1231	Grounds Genl Plant Maintenance	Overhead	$2,700,716
1232	Janitorial Service	Overhead	$329,362
1312	Maintain Oxygen Productn Plant	Secondary Mtn	$172,274
1322	Maintn Secndry Reactors Clairf	Secondary Mtn	$650,170
1323	Operate Secondary Trtmnt Facil	Secondary Op	$3,281,986
1332	Maintain Process Wtr Plant	Secondary Mtn	$3,238
1423	Operate Sludge Processes	Sludge Op	$9,395,911
1424	Maintain Sludge Processes	Sludge Mtn	$1,479,309
1531	Operate Oakport Storm Facility	Wet	$344,920
1532	Maintain Oakport Storm Facilty	Wet	$443,502
1551	Operate Pt Isabel Storm Faclty	Wet	$534,162
1552	Maintain Pt Isabel Storm Fclty	Wet	$265,319
1561	Ope Sn Antonio Cr Stormwtr Fac	Wet	$137,879
2004	Resource Recovery Admin	R2	$1,497,185
2011	Laboratory Analysis	Lab	$3,166,226
2012	Laboratory Support	Lab	$2,534,834
2020	Laboratory Research & Develop	Lab	$112,071
2111	Maintenance Engineering	Overhead	$0
2113	Research & Developmnt Engnrng	Overhead	$465
2114	Plant Operation Engineering	Overhead	$464,188
2115	Special Investigations	Overhead	$419,817
2211	Npdes Compliance Monitoring	Overhead	$418,116
2212	Admin Indus Dischg Compli Prog	Permit	$555,780
2213	Wet Wthr Compl Monitor (Npdes)	Wet	$816
2214	Investigate Illegal Discharges	Permit	$0
2216	Inspect Indus Discharge Facilt	Permit	$309
2217	Implmt Pollution Prevent Prog	Permit	$208,740
2220	Air Quality Administration	Overhead	$3,373
2222	Inspect Support Ww Dept Projts	Overhead	$1,445
2224	Review Compliance	Permit	$19,169
2225	Other Source Contrl Activities	Permit	$344,441
2226	Other Field Service Activities	Permit	$13,631
2227	Grease Hotspot Response	Reimbursed	$86,071
2228	I/I Control Program	I/I	$3,998,689
2230	Inpsect/Monitor Revenue Prgram	Overhead	$239
2231	Revise Revenue Programs	Overhead	$260,839
2233	Admn Wet Wthr Rates & Charges	Billing	$35,463
2400	WW Asset Management Program	Overhead	$357,949
2401	WW Emergency Preparedness	Overhead	$32,561
3627	Operate Pwr Generation Facilty	PGS	$1,695,246
3657	Maint Power Generation Facilty	PGS	$287,360
4052	Chevron Reclamation Fac Oper	Reclaimed	$4,852
4054	E BAYSHORE Wtr Recl Fac - Op	Reclaimed	$3,777
4055	E BAYSHORE Wtr Recl Fac - Mai	Reclaimed	$101,623
6500	Operate Irrigation Process	Reimbursed	$27,442
6510	Maintain Irrigation Projects	Reimbursed	$18,365
6565	Bill & Collection Chargebacks	Billing	$2,196,283
6572	Work for Others - Billable	Reimbursed	$28,516
6573	Work for Water System Genl Fnd	Reimbursed	$1,816
6576	Work for I/I Correction Progrm	I/I	$112
6577	Union Business Reimbursable	Reimbursed	$55,303
6579	Chev Recl Liq-Operation	Reclaimed	$141,803
6600	Chev Recl Liq-Maint	Reclaimed	$131,600
6601	RARE Operations & Maintenance	Reclaimed	$516,484
6602	Chev Recl Sol - Maintenance	Reclaimed	$52,652
8000	Operating Budget - No Expense	Overhead	$0
8117	WW Data Management System	Overhead	$654,043
8118	DCS Operations & Maintenance	Overhead	$164,095
8345	Vehicle Maintenance and Repair	Overhead	$1,332
8511	Administrative & General	Overhead	($3,176,540)
8512	Employee Relations	Overhead	$229,894
8513	General Training	Overhead	$124,045
8515	Fiscal Activities	Overhead	$142
8516	Financial Planning	Overhead	$68,687
8519	Rate Analysis	Overhead	$246
8523	Technical Training	Overhead	$1,481,072
8524	Regulatory Compliance Training	Overhead	$179,039
8526	Internal Audits	Overhead	$305
8541	Financial Reporting	Overhead	$124
8561	Water System A & G Chargebacks	Overhead	$6,014,354
8563	Insurance Chargebacks	Overhead	$343,543
8567	Regulatory Management	Overhead	$919,282
8587	Employee Recognition Program	Overhead	$6,425
8590	Non-Ergonomic Furn & Inst Exp	Overhead	$846
8591	Ergonomic Audit Compliance	Overhead	$7,562
8592	Occupational Health & Safety	Overhead	$43,065
8593	Workers Compensation	Overhead	$272,528
8595	Production Exams	Overhead	$6,693
8621	Purchases For Stores	Overhead	$0
8624	Rebuild Parts for WW Stores	Sludge Mtn	$79,731
8711	Community Relations	Overhead	$2,939
8712	Legislative Affairs	Overhead	$11,549
8713	Customer/News Media Relations	Overhead	$0
8723	District Publications	Overhead	$0
8732	Emer Prepare/Hazd Miti Mgmt	Overhead	$25,548
8733	Affirmative Action	Overhead	$19,280
8755	Financial Systems	Overhead	$368
8766	Info Sys Planning	Overhead	$135,740
8905	Organizational Memberships	Overhead	$198,756
8923	Risk Management	Overhead	$40
8940	Capital Programs Management	Overhead	$343,379
8941	Departmental Overhead	Overhead	$4,265,448
8951	Area Yard Expense	Overhead	$0
8992	Budget Office Adjustments	Overhead	$0
TOTAL O&M			**$63,926,037**

Appendix C – Fixed Asset Listing

Fixed Asset Listing Including R2 Assets

Unit Process CATEGORY*	Class Descr.	Class Code	ORIG.COST	ENR ADJ COST	DEPR.	NET BOOK VALUE	ENR ADJ NET BOOK
CHLORINATION	Mwwtp-Chlorine System	**WW0352 Total**	$195,146	$235,085	$38,192	$156,954	$186,190
CHLORINATION	Mwwtp-Chlorination Building	**WW0402 Total**	$4,251,633	$8,305,662	$2,822,637	$1,428,996	$2,780,669
EFFLUENT	Mwwtp-Outfall Land	**WW0311 Total**	$2,078,909	$37,573,997	$1,749,213	$329,696	$4,914,159
EFFLUENT	Mwwtp-Outfall Submarine	**WW0312 Total**	$5,545,770	$35,463,863	$2,484,933	$3,060,837	$9,205,483
EFFLUENT	Mwwtp-Outfall Bridge	**WW0313 Total**	$238,025	$553,777	$144,239	$93,786	$218,197
EFFLUENT	Mwwtp-Effluent Pump Station	**WW0342 Total**	$19,753,653	$50,937,272	$14,466,277	$5,287,377	$10,388,412
EFFLUENT	Mwwtp-Water Pump Station #3	**WW0347 Total**	$896,125	$1,758,671	$456,222	$439,902	$863,322
EFFLUENT	Mwwtp-Process Water Plant	**WW0381 Total**	$35,549	$45,931	$10,072	$25,477	$32,917
EFFLUENT	Mwwtp-Dechlorination Station	**WW0382 Total**	$11,547,948	$21,763,793	$6,176,794	$5,371,154	$8,720,247
EFFLUENT	Mwwtp-Filter Plant Solids Handling Facility	**WW0387 Total**	$23,339,363	$30,708,751	$5,841,899	$17,497,464	$22,626,059
EFFLUENT	Mwwtp-Sodium Bisulfite Area	**WW0508 Total**	$2,228,383	$4,106,789	$1,777,323	$451,061	$831,280
GENERAL (% ALLOC	Mwwtp-Grounds & Improvements	**WW0371 Total**	$17,856,733	$65,846,631	$3,554,284	$14,302,449	$41,252,798
GENERAL (% ALLOC	Mwwtp-Administration And Lab Building	**WW0372 Total**	$14,641,163	$24,856,819	$5,042,638	$9,598,525	$16,251,701
GENERAL (% ALLOC	Mwwtp-Service Building	**WW0373 Total**	$85,103	$1,521,999	$85,103	$0	$0
GENERAL (% ALLOC	Mwwtp-Administration And Lab Center	**WW0375 Total**	$29,149,018	$61,751,583	$18,730,344	$10,418,674	$18,533,056
GENERAL (% ALLOC	Mwwtp-Maintenance Center	**WW0376 Total**	$12,762,666	$25,027,753	$4,496,152	$8,266,515	$13,965,697
GENERAL (% ALLOC	Mwwtp-Piping For Plant Utilities	**WW0401 Total**	$29,335,050	$53,964,487	$23,475,208	$5,859,841	$8,456,170
GENERAL (% ALLOC	Mwwtp-Bulk Storage Area	**WW0506 Total**	$4,675,143	$8,616,033	$3,857,998	$817,145	$1,505,954
GENERAL (% ALLOC	Mwwtp-Field Services Bldg	**WW0917 Total**	$2,707,085	$4,385,876	$520,848	$2,186,237	$3,531,511
GENERAL (% ALLOC	Wastewater Land - General	**WWLAND Total**	$15,698,358	$18,838,029	$0	$15,698,358	$18,838,029
GENERAL (% ALLOC	ALL WASTEWATER PORTABLE EQUIPMENT	**WWPEQP Total**	$17,016,906	$23,080,843	$8,857,313	$8,159,593	$9,022,399
GRIT	Mwwtp-Aerated Grit Tanks	**WW0351 Total**	$6,738,689	$24,868,458	$5,142,043	$1,596,646	$5,543,750
GRIT	Mwwtp-Grit Dewatering Station	**WW0357 Total**	$13,095,923	$18,293,994	$4,799,289	$8,296,634	$11,380,202
INFLUENT	Mwwtp-Influent Pump Station	**WW0341 Total**	$44,958,489	$87,805,442	$23,222,046	$21,736,444	$32,843,269
INTERCEPTOR	North Interceptor	**WW0301 Total**	$41,420,877	$123,207,365	$12,945,682	$28,475,195	$58,423,966
INTERCEPTOR	South Interceptor	**WW0302 Total**	$34,996,907	$194,804,054	$14,527,558	$20,469,350	$50,076,391
INTERCEPTOR	Alameda Interceptor	**WW0303 Total**	$16,499,924	$50,887,666	$2,888,235	$13,611,689	$20,746,285
INTERCEPTOR	Estuary Crossing	**WW0304 Total**	$456,493	$8,613,905	$398,346	$58,147	$1,097,142
INTERCEPTOR	Central Avenue Interceptor	**WW0305 Total**	$8,938,996	$16,212,501	$2,322,141	$6,616,856	$12,000,875
INTERCEPTOR	South Foothill Interceptor	**WW0306 Total**	$21,294,073	$41,755,704	$6,350,700	$14,943,372	$29,180,384
INTERCEPTOR	Adeline Street Interceptor	**WW0307 Total**	$18,786,975	$34,841,246	$5,298,935	$13,488,040	$24,768,192
INTERCEPTOR	Powell Street Interceptor	**WW0308 Total**	$5,290,727	$10,023,746	$3,149,519	$2,141,208	$4,032,671
INTERCEPTOR	ANAS Interceptor	**WW0309 Total**	$3,487,760	$5,903,844	$747,931	$2,739,830	$4,637,798
INTERCEPTOR	Wood St Interceptor	**WW0310 Total**	$20,997,951	$22,990,808	$715,854	$20,282,096	$22,104,951
INTERCEPTOR	Pump Station A-Albany	**WW0321 Total**	$3,671,840	$6,903,405	$1,264,231	$2,407,608	$3,237,385
INTERCEPTOR	Pump Station B-Fernside	**WW0322 Total**	$6,626,560	$13,437,291	$3,554,247	$3,072,313	$5,585,393
INTERCEPTOR	Pump Station C-Krusi Park	**WW0323 Total**	$13,224,227	$27,331,207	$6,245,021	$6,979,206	$12,134,648
INTERCEPTOR	Pump Station D-Oak Street	**WW0324 Total**	$1,476,192	$2,413,942	$261,955	$1,214,238	$1,554,592
INTERCEPTOR	Pump Station E-Grand Street	**WW0325 Total**	$1,456,328	$2,232,785	$259,280	$1,197,049	$1,400,556
INTERCEPTOR	Pump Station F-Atlantic Avenue	**WW0326 Total**	$1,858,182	$4,964,291	$993,727	$864,455	$1,685,186
INTERCEPTOR	Pump Station G-Airport	**WW0327 Total**	$2,676,794	$6,036,937	$1,232,324	$1,444,470	$2,795,700
INTERCEPTOR	Pump Station H-Fruitvale	**WW0328 Total**	$11,532,000	$21,587,169	$4,213,606	$7,318,394	$9,657,560
INTERCEPTOR	Pump Station J-Frederick Street	**WW0329 Total**	$1,353,719	$4,232,678	$912,424	$441,295	$1,257,012
INTERCEPTOR	Pump Station K-7Th Street	**WW0330 Total**	$1,426,705	$4,302,641	$882,403	$544,302	$1,412,098

Fixed Asset Listing Including R2 Assets Continued

Unit Process CATEGORY*	Class Descr.	Class Code	ORIG.COST	ENR ADJ COST	DEPR.	NET BOOK VALUE	ENR ADJ NET BOOK
INTERCEPTOR	Pump Station L	**WW0331 Total**	$4,860,237	$9,397,137	$2,148,866	$2,711,371	$5,015,645
INTERCEPTOR	Pump Station Q- Wet Weather Page St Berkeley	**WW0333 Total**	$591,847	$1,024,700	$261,770	$330,077	$554,685
INTERCEPTOR	Pump Station N (new)	**WW0334 Total**	$6,329	$8,531	$2,022	$4,307	$5,806
INTERCEPTOR	ANAS Pump Station R	**WW0335 Total**	$7,367,039	$12,474,919	$1,557,089	$5,809,949	$9,838,090
INTERCEPTOR	Pump Station M - Bridgeway	**WW0344 Total**	$2,963,275	$4,417,692	$906,942	$2,056,333	$2,830,600
Secondary	Mwwtp-Reactor Deck Area-Oxygen Production	**WW0369 Total**	$11,292,511	$27,264,106	$8,619,301	$2,673,209	$5,642,565
Secondary	Mwwtp-Secondary Treatment Facility	**WW0370 Total**	$68,885,284	$186,848,178	$35,772,517	$33,112,767	$68,121,502
PGS	Mwwtp-Power Generation Station	**WW0386 Total**	$94,548,798	$142,097,199	$34,377,181	$60,171,617	$77,442,495
PRIMARY	Mwwtp-Scum Dewatering Station	**WW0399 Total**	$8,971,497	$13,645,702	$2,710,608	$6,260,889	$9,352,008
PRIMARY	Mwwtp-Chemical Trench	**WW0400 Total**	$720,479	$1,413,962	$265,109	$455,370	$893,677
PRIMARY	Mwwtp-Pre-Chlorination Facility	**WW0507 Total**	$1,451,611	$2,675,239	$1,047,253	$404,358	$745,210
SLUDGE	Mwwtp-Chemical Storage Building (Relocated)	**WW0374 Total**	$3,099,994	$5,431,990	$1,707,302	$1,392,692	$2,403,686
SLUDGE	Mwwtp-Sludge Digestion Facilities	**WW0383 Total**	$137,687,776	$189,522,660	$36,039,066	$101,648,710	$127,315,822
SLUDGE	Mwwtp-Sludge Dewatering Facilities	**WW0384 Total**	$40,533,004	$66,048,316	$16,776,847	$23,756,157	$34,276,421
SLUDGE	Mwwtp-Temp Sludge Dewatering Facility	**WW0385 Total**	$1,521,047	$1,965,280	$435,188	$1,085,859	$1,402,992
SLUDGE	Mwwtp-Odor Control At Sludge Thickener	**WW0388 Total**	$15,546,197	$31,588,096	$9,431,944	$6,114,254	$12,152,375
SLUDGE	Mwwtp-Composting Facility	**WW0450 Total**	$1,316,220	$1,769,386	$422,719	$893,502	$1,201,029
WET WEATHER	Pt. Isabel Tp-Treatment & Pretreatment Structur	**WW0343 Total**	$45,505,445	$79,322,234	$23,284,945	$22,220,500	$38,484,242
WET WEATHER	Mwwtp-Mid-Plant Pump Station	**WW0346 Total**	$6,638,722	$10,689,873	$3,071,790	$3,566,932	$5,416,024
WET WEATHER	Mwwtp-Wet Weather Pump Station	**WW0348 Total**	$1,289,130	$1,793,206	$281,433	$1,007,696	$1,350,090
WET WEATHER	Mwwtp-Washdown Pump Station	**WW0349 Total**	$215,504	$422,933	$132,464	$83,040	$162,968
WET WEATHER	Point Richmond-Pretreatment Structure	**WW0354 Total**	$8,000	$14,744	$8,000	$0	$0
WET WEATHER	Oakport Wet Weather-Pretreatment Structure	**WW0355 Total**	$10,004,031	$20,696,768	$4,695,127	$5,308,904	$10,353,021
WET WEATHER	Oakport Wet Weather-Pretreatment Structure	**WW0356 Total**	$2,043,657	$3,035,239	$320,290	$1,723,367	$2,403,306
WET WEATHER	Mwwtp-Channel Crossing For Bypass Channel	**WW0358 Total**	$4,780,140	$9,381,167	$1,596,693	$3,183,447	$6,247,609
WET WEATHER	Mwwtp 90" Pipe-Primry Effluent Bypass	**WW0359 Total**	$2,005,802	$3,936,446	$582,318	$1,423,484	$2,793,630
WET WEATHER	Mwwtp 72" Pipe-Primry Influent Bypass	**WW0360 Total**	$2,540,549	$4,830,464	$1,231,433	$1,309,116	$2,552,927
WET WEATHER	Mwwtp-Diversion Structure	**WW0361 Total**	$28,195,434	$76,418,148	$11,603,602	$16,591,832	$27,553,044
WET WEATHER	Mwwtp-Bypass Inlet Structure	**WW0362 Total**	$15,415,976	$66,083,386	$10,831,043	$4,584,933	$10,480,288
WET WEATHER	North Interceptor Junction Storage	**WW0363 Total**	$341,675	$1,094,573	$117,925	$223,750	$863,142
WET WEATHER	Mwwtp-Bypass Outlet Structure	**WW0364 Total**	$587,432	$1,855,267	$273,342	$314,090	$616,410
WET WEATHER	Mwwtp-Final Effluent Bypass Channel	**WW0365 Total**	$8,287,786	$9,507,372	$747,149	$7,540,637	$8,548,717
WET WEATHER	Mwwtp-Storage Basin	**WW0366 Total**	$20,503,268	$40,861,822	$6,996,233	$13,507,035	$26,506,411
WET WEATHER	Oakport WW-Chlor System	**WW0391 Total**	$628,279	$1,345,499	$527,519	$100,760	$177,325
WET WEATHER	Oakport WW-DeChlor System	**WW0392 Total**	$962,754	$1,953,463	$869,987	$92,767	$149,286
WET WEATHER	Oakport WW-Control Bldg	**WW0393 Total**	$1,439,408	$3,195,628	$1,057,726	$381,682	$847,594
WET WEATHER	Oakport WW-Emg Gen	**WW0394 Total**	$955,196	$1,843,016	$557,844	$397,352	$632,197
WET WEATHER	Oakport WW-Drainage	**WW0395 Total**	$1,160,534	$2,577,178	$687,704	$472,831	$1,050,006
WET WEATHER	Oakport WW-Washwtr Pump Sta.	**WW0396 Total**	$121,075	$268,870	$121,075	$0	$0
WET WEATHER	Oakport WW-Storage Bldg.	**WW0397 Total**	$436,931	$970,286	$151,788	$285,143	$633,213
WET WEATHER	Oakport WW-Lscape/Pav/Fence	**WW0398 Total**	$1,996,609	$4,417,692	$483,477	$1,513,133	$3,344,044
WET WEATHER	San Antonio Creek Wet Weather TP	**WW0500 Total**	$13,470,868	$24,821,541	$6,619,905	$6,850,962	$12,622,514
WET WEATHER	San Antonio Creek Ww Dechlorination Facility	**WW0501 Total**	$6,203,211	$8,990,173	$1,786,184	$4,417,027	$5,917,619
WET WEATHER	San Antonio Creek Ww Outfall Structure	**WW0502 Total**	$2,682,144	$4,934,140	$1,165,669	$1,516,475	$2,787,508
WET WEATHER	San Antonio Creek Ww Gravity Sewer	**WW0503 Total**	$540,029	$995,243	$220,545	$319,484	$588,791
WET WEATHER	San Antonio Creek Ww Lake Merritt Channel Cro	**WW0504 Total**	$1,759,796	$3,243,208	$898,431	$861,364	$1,587,448
WET WEATHER	San Antonio Creek Ww Outfall Subequacous Pip	**WW0505 Total**	$2,278,822	$4,199,745	$930,711	$1,348,111	$2,484,495
INTERCEPTOR	Versailles interceptor	**WW0918 Total**	$1,552,995	$1,700,439	$71,179	$1,481,816	$1,622,502
	TOTAL WASTEWATER ASSETS		**$1,082,218,409**	**$2,305,987,576**	**$441,320,440**	**$640,897,969**	**$1,047,651,236**

Appendix D – Construction Cost Index

Engineering News Record Construction Cost Index – 20 Cities

Year	CCI Average	Year	CCI Average	Year	CCI Average
1908	97	**1945**	308	**1982**	3825
1909	91	**1946**	346	**1983**	4066
1910	96	**1947**	413	**1984**	4146
1911	93	**1948**	461	**1985**	4195
1912	91	**1949**	477	**1986**	4295
1913	100	**1950**	510	**1987**	4406
1914	89	**1951**	543	**1988**	4519
1915	93	**1952**	569	**1989**	4615
1916	130	**1953**	600	**1990**	4732
1917	181	**1954**	628	**1991**	4835
1918	189	**1955**	660	**1992**	4985
1919	198	**1956**	692	**1993**	5210
1920	251	**1957**	724	**1994**	5408
1921	202	**1958**	759	**1995**	5471
1922	174	**1959**	797	**1996**	5620
1923	214	**1960**	824	**1997**	5826
1924	215	**1961**	847	**1998**	5920
1925	207	**1962**	872	**1999**	6059
1926	208	**1963**	901	**2000**	6221
1927	206	**1964**	936	**2001**	6343
1928	207	**1965**	971	**2002**	6538
1929	207	**1966**	1019	**2003**	6694
1930	203	**1967**	1074	**2004**	7115
1931	181	**1968**	1155	**2005**	7446
1932	157	**1969**	1269	**2006**	7751
1933	170	**1970**	1381	**2007**	7966
1934	198	**1971**	1581	**2008**	8310
1935	196	**1972**	1753	**2009**	8570
1936	206	**1973**	1895	**2010**	8799
1937	235	**1974**	2020	**2011**	9070
1938	236	**1975**	2212	**2012**	9308
1939	236	**1976**	2401	**2013**	9547
1940	242	**1977**	2576	**2014**	9806
1941	258	**1978**	2776	**2015**	10035
1942	276	**1979**	3003	**2016**	10338
1943	290	**1980**	3237	**2017**	10737
1944	299	**1981**	3535	**2018**	11062

Appendix E – Non-Residential WCF

Non-Residential Yearly Average Wastewater Use by Meter Size for WCF Calculation

Meter Size	FY 17 WW Consumption (ccf)	Number of Accounts	Yearly Average Use (ccf)
5/8 inch	1,230,073	9,318	132
3/4 & 1 inch	1,231,818	3,548	347
1-1/2 inch	2,008,662	2,973	676

Non-Residential Strength Assumptions for WCF Calculation

BCC	Description	COD (mg/L)	TSS (mg/L)	Total Strength	Strength Category	Flow (hcf/yr)	Weighted COD	Weighted TSS
2010	Meat Products	7,752	420	8,172	High	4,776	37,023,552	2,005,920
2011	Slaughterhouses	3,230	1,400	4,630	Medium	944	3,049,120	1,321,600
2020	Dairy Product Processing	5,491	390	5,881	High	5,917	32,490,247	2,307,630
2040	Grain Mills	2,196	770	2,966	Medium	4,955	10,884,214	3,815,719
2050	Bakeries	5,491	1,200	6,691	High	22,221	122,015,511	26,665,200
2060	Sugar Processing	5,168	30	5,198	High	4,372	22,594,496	131,160
2080	Beverage Mfgr & Bottling	3,101	130	3,231	Medium	99,255	307,771,216	12,903,205
2090	Specialty Foods Mfgr	15,504	1,300	16,804	High	9,014	139,753,056	11,718,200
2600	Pulp and Paper Products	1,744	640	2,384	Medium	3,716	6,482,040	2,378,458
2810	Inorganic Chemicals Mfgr	323	1,400	1,723	Medium	2,869	926,687	4,016,600
2820	Synthetic Material Mfgr	97	30	127	Low	2,620	253,878	78,600
2830	Drug Mfgr	2,003	70	2,073	Medium	121,476	243,268,679	8,503,349
2840	Cleaning and Sanitation Prod	4,522	420	4,942	Medium	839	3,793,958	352,380
2850	Paint Mfgr	7,752	1,400	9,152	High	140	1,085,280	196,000
3200	Earthenware Mfgr	388	550	938	Low	8,157	3,161,653	4,486,350
3300	Primary Metals Mfgr	291	360	651	Low	17,075	4,963,680	6,146,973
3400	Metal Prod Fabricating	258	30	288	Low	12,835	3,316,564	385,050
3470	Metal Coating	258	70	328	Low	4,660	1,204,061	326,177
4500	Air Transportation	808	100	908	Low	95,439	77,066,593	9,543,851
5812	Food Service Establishment	1,809	940	2,749	Medium	778,957	1,408,977,422	732,219,580
7000	Hotels, Motels with Food	840	680	1,520	Low	182,844	153,552,302	124,333,848
7210	Commercial Laundries	1,841	310	2,151	Medium	16,536	30,444,430	5,126,160
7215	Coin Operated Laundromats	1,163	190	1,353	Low	247,521	287,817,419	47,028,990
7218	Industrial Laundries	8,721	740	9,461	High	61,921	540,011,646	45,821,422
7300	Laboratories	614	80	694	Low	73,470	45,088,809	5,877,635
7542	Auto Washing and Polishing	937	200	1,137	Low	46,252	43,324,248	9,250,400
8060	Hospitals	517	270	787	Low	196,797	101,704,493	53,135,087
8200	Schools	452	80	532	Low	727,541	328,993,952	58,203,264
0	All Other	713	300	1,013	Low	2,804,374	1,998,116,539	841,312,227