El Dorado Irrigation District

2024 Facility Capacity Charges Update Study

Final Report – September 12, 2024

Prepared by: Water Resources Economics, LLC

Water Resources Economics

PROMOTING THE VALUE AND PRICE OF WATER SERVICE

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September 12, 2024

Brian Mueller, P.E.
Director of Engineering
El Dorado Irrigation District
2890 Mosquito Road
Placerville, CA 95667

Subject: El Dorado Irrigation District 2024 Facility Capacity Charges Update Study

Dear Mr. Mueller,

Water Resources Economics, LLC is pleased to submit this 2024 Facility Capacity Charges (FCC) Update Study Report to El Dorado Irrigation District. This report documents the results and recommendations of the 2024 FCC Update Study. The overall goal of the study was to develop updated FCCs that ensure that new development contributes its fair share towards capital investments required to ensure sufficient system capacity. The underlying principle is that growth should pay for growth such that existing ratepayers are not unfairly burdened by costs incurred to accommodate new development.

This FCC Update Study utilized industry-standard methodology in accordance with guidelines developed by the American Water Works Association. Our project team has a proven track record of developing fair and equitable capacity charges for numerous public water and wastewater agencies in California over the past 25 years. We are confident in our ability to develop capacity charges that satisfy relevant legal requirements in California.

It has been a pleasure assisting the District and we appreciate the support provided by yourself and other District staff throughout the 2024 FCC Update Study process.

Sincerely,

Sanjay Gaur, Founder / President
Water Resources Economics, LLC

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LIST OF ABBREVIATIONS

AF: Acre-feet
AFY: Acre-feet per year
AMI: Agricultural metered irrigation
AR: Administrative Regulation
AWWA: American Water Works Association
CCI: Engineering News-Record Construction Cost Index (20-city national average)
CIP: Capital Improvement Plan
District: El Dorado Irrigation District
EDHWTP: El Dorado Hills Water Treatment Plant
EDU: Equivalent dwelling unit
FCC: Facility Capacity Charge
GPM: Gallons per minute
MFR: Multi-family residential
MGD: Million gallons per day
OCLD: Original cost less depreciation
OC: Original cost
RC: Replacement cost
RCLD: Replacement cost less depreciation
SFR: Single family residential
WRE: Water Resources Economics, LLC

1. EXECUTIVE SUMMARY

STUDY OVERVIEW

New connections to El Dorado Irrigation District's potable water, recycled water, and wastewater systems are subject to Facility Capacity Charges (FCCs).[1] FCCs are necessary to ensure that existing users are not unfairly burdened by costs incurred to provide capacity to new users. FCCs are often referred to by other retail water and wastewater agencies as "capacity charges" or other similar terms. The District currently has adopted FCC schedules for six distinct categories of new connections:

1. Potable Water
2. Wastewater
3. Recycled Water
4. Agricultural Metered Irrigation (AMI)[2]
5. Dual Plumbed Residential[3]
6. Private Fire Service[4]

Public water and wastewater agencies typically conduct capacity charge nexus studies periodically to ensure that charges are fair, reasonable, and consistent with legal requirements. The District last conducted a capacity charge nexus study in 2013. Since 2013, the District has increased its adopted FCCs annually in proportion to changes in the Engineering News-Record's 20-city national average Construction Cost Index (CCI).

The District engaged Water Resources Economics, LLC (WRE) in early 2024 to conduct a new capacity charge nexus study. The key objective of this 2024 FCC Update Study was to develop updated FCCs that are fair and equitable to both new development and existing users and are in alignment with legal requirements. In order to achieve this objective, WRE reviewed District data, determined the most appropriate FCC methodologies based on industry standards, and calculated proposed FCCs.

LEGAL REQUIREMENTS

Legal considerations relating to water and wastewater capacity charges in California focus heavily on California Government Code Section 66013(a), which states that public water and wastewater agencies in California must demonstrate that the capacity charges paid by new users connecting to the system do not exceed the estimated reasonable cost of providing the services for which the

[1] Note that existing connections requiring additional system capacity are also subject to FCCs based on incremental increases in capacity (e.g., when an existing water meter is replaced with a larger sized meter).
[2] Metered potable water connections used for agricultural irrigation purposes that meet the AMI criteria outlined in the District's Administrative Regulation (AR) 9024.
[3] Single family residential customers with both a potable water metered connection for indoor water needs and a recycled water metered connection for outdoor watering needs.
[4] Dedicated potable water connections for private fire protection purposes such as fire suppression sprinklers, private hydrants, fire standpipes, etc. Note that only 8-inch and 10-inch connections are currently subject to FCCs.

charge is imposed and that the charge has a proportional benefit to the user. The primary means by which retail water and wastewater agencies in California address this requirement is by periodically conducting a capacity charge nexus study.

COMMON CAPACITY CHARGE METHODOLOGIES

The overall purpose of a capacity charge is to equitably recover capital costs incurred by the agency to provide system capacity to new users. Water and wastewater capacity charges in California are typically developed based on one of three common methodologies outlined by the American Water Works Association (AWWA) in its *Manual of Water Supply Practices M1: Principles of Water Rates, Fees and Charges, Seventh Edition*:

1. **Buy-in Method**: The Buy-in Method establishes capacity charges based on the value of the system's existing capital assets and is typically most appropriate when a system's current capacity is sufficient to serve both short-term and long-term projected demands. The rationale underlying the Buy-in Method is that new customers should pay to "buy-in" to existing system capacity funded by past and current users.
2. **Incremental Cost Method**: The Incremental Cost Method establishes capacity charges based on the cost of planned capital expenditures required to expand system capacity and is typically most appropriate when a system's current capacity is already fully utilized by existing users. The rationale underlying the Incremental Cost Method is that new users should fund planned capital projects that are necessary to accommodate growth in the service area.
3. **Hybrid Method**: The Hybrid Method[5] establishes capacity charges based on a combination of the Buy-in Method and the Incremental Cost Method. The Hybrid Method is typically most appropriate when some existing capacity is available to new users, but capacity expansion is still necessary to accommodate long-term demands.

PROPOSED FCC METHODOLOGY

WRE worked closely with District staff to evaluate and determine the proposed methodology used to calculate proposed FCCs in this study, described below and summarized in Table 2-1.

- **Potable Water FCCs**: The 2013 FCC Update Study established Potable Water FCCs based on the Hybrid Method. WRE recommends retaining this methodology, as long-term future demands are expected to be met by a combination of both existing system capacity and future capacity expansion.
- **Wastewater FCCs:** The 2013 FCC Update Study established Wastewater FCCs based on the Hybrid Method. Consistent with potable water, WRE recommends retaining the Hybrid Method for proposed Wastewater FCCs, as future wastewater users will be accommodated by a combination of both existing system capacity and future capacity expansion.

[5] The Hybrid Method is referred to by the AWWA as the "Combined Cost Approach."

- **Recycled Water FCCs**: The 2013 FCC Update Study utilized the Hybrid Method to establish Recycled Water FCCs. However, there is no longer any significant expansion-related CIP planned for the District's recycled water system. Therefore, WRE recommends the Buy-in Method to establish proposed Recycled Water FCCs.
- **Agricultural Metered Irrigation (AMI) FCCs**: The basis for the District's current AMI FCCs was not evaluated during the 2013 FCC Update Study. AMI customers do not directly benefit from significant portions of the potable water system, such as treatment facilities. Therefore, WRE recommends that new AMI connections be subject to a reduced version of the proposed Potable Water FCC based on their proportional utilization of the potable water system.
- **Dual Plumbed Residential FCCs**: Dual plumbed residential connections are subject to a Potable Water FCC and a Recycled Water FCC. However, the 2013 FCC Update Study established reduced Potable Water FCCs for dual plumbed residential connections. WRE recommends maintaining this approach.
- **Private Fire Service FCCs**: The basis for the District's current Private Fire Service FCCs was not evaluated during the 2013 FCC Update Study. Separate capacity charges for dedicated private fire protection connections are not common in California. WRE therefore recommends that the District discontinue its Private Fire Service FCCs altogether.

Table 1-1: Existing and Proposed FCC Methodologies

FCC Category	Existing Methodology (per 2013 FCC Update)	Proposed Methodology (per 2024 FCC Update)
Potable Water	Hybrid	Hybrid
Wastewater	Hybrid	Hybrid
Recycled Water	Hybrid	Buy-in
Agricultural Metered Irrigation (AMI)	N/A	Hybrid
Dual Plumbed Residential	Hybrid	Hybrid (for Potable Water FCC component) / Buy-in for (Recycled Water FCC component)
Private Fire Service	N/A	Discontinued

PROPOSED CHANGES TO MULTI-FAMILY RESIDENTIAL FCCS

Current FCCs are differentiated by meter size for all customer classes except for multi-family residential, which are assessed per dwelling unit. Currently, each multi-family dwelling unit is subject to an FCC amount equal to 75% of the FCC amount for a ¾-inch water meter. WRE recommends that FCCs for new multi-family residential connections be assessed based on meter size rather than the number of dwelling units. This proposed change will treat multi-family residential connections consistently with all other customer classes, will simplify the FCC structure, and will better align the District with industry standards.

PROPOSED FCCS PER EQUIVALENT DWELLING UNIT (EDU)

Proposed FCCs were calculated based on the proposed methodologies using 2024 as a base year. Therefore, the District may apply annual CCI adjustments to the proposed FCCs beginning January 1, 2025, and each year thereafter. Current and proposed FCCs are compared on a per equivalent dwelling unit (EDU) basis below (see Table 1-2). One EDU is based on the capacity of a ¾-inch water meter and represents the water demand of a typical single family detached residence. The differences between proposed and current FCCs are primarily due to significant changes in planned expansion-related capital projects since the 2013 FCC Update Study.

Table 1-2: Comparison of Current and Proposed FCCs

Current vs. Proposed FCCs	Current FCC	Proposed FCC	Difference ($)
Potable Water (per EDU)	$25,178	$33,809	*$8,631*
Wastewater (per EDU)	$17,934	$13,794	*($4,140)*
Recycled Water (per EDU)	$4,246	$3,115	*($1,131)*
Agricultural Metered Irrigation (per EDU)	$1,123	$10,416	*$9,293*
Dual Plumbed Residential (per EDU)	$20,907	$23,288	*$2,381*
Private Fire Service (8-inch connection)	$30,290	N/A	*N/A*
Private Fire Service (10-inch connection)	$47,710	N/A	*N/A*

PROPOSED FCCS FOR TYPICAL SINGLE FAMILY RESIDENTIAL DEVELOPMENTS

The majority of new development in the District's service area will be single family residential homes requiring potable water and wastewater services from the District. Therefore, a comparison of combined Potable Water and Wastewater FCCs for one EDU is shown below (see Table 1-3).

Table 1-3: Combined Potable Water and Wastewater FCCs

Combined Potable Water & Wastewater FCCs	Current FCC	Proposed FCC	Difference ($)
Potable Water FCC (per EDU)	$25,178	$33,809	*$8,631*
Wastewater FCC (per EDU)	$17,934	$13,794	*($4,140)*
Total	**$43,112**	**$47,603**	***$4,491***

PROPOSED FCCS BY METER SIZE AND TYPE

A detailed schedule of all proposed FCCs by meter size and type is provided in Table 1-4. Proposed FCCs increase with meter size in proportion to the capacity of each meter size and type. This approach ensures that new connections are appropriately charged in proportion to water meter capacity. Each proposed FCC is equal to the sum of up to four distinct FCC components. The "Buy-in" and "Incremental Cost" components were calculated by WRE based on the proposed methodology. The "Gabbro Soils" and "Line & Cover 3" components are existing supplemental charges that apply to potable water services only. Each supplemental charge is designed to recover specific District costs attributable to new potable water connections. No changes to the existing supplemental charges were recommended as part of this study.

Table 1-4: Proposed FCC Schedule

Meter Size/ Connection Type	EDU Equivalency	Buy-In	Incremental Cost	Gabbro Soils[6]	Line & Cover 3[7]	Proposed FCC
Potable Water						
3/4-inch	1.0	$5,635	$27,504	$345	$325	**$33,809**
SFR 1-inch[8]	1.0	$5,635	$27,504	$345	$325	**$33,809**
1-inch	1.7	$9,391	$45,840	$575	$542	**$56,348**
1.5-inch Turbine	4.0	$22,540	$110,016	$1,380	$1,300	**$135,235**
2-inch Turbine	5.3	$30,053	$146,688	$1,840	$1,733	**$180,314**
3-inch Turbine	11.7	$65,740	$320,879	$4,025	$3,792	**$394,436**
4-inch Turbine	21.0	$118,332	$577,583	$7,245	$6,825	**$709,985**
6-inch Turbine	46.7	$262,961	$1,283,517	$16,100	$15,167	**$1,577,745**
8-inch Turbine	80.0	$450,790	$2,200,315	$27,600	$26,000	**$2,704,706**
Wastewater						
3/4-inch	1.0	$7,765	$6,028	N/A	N/A	**$13,794**
SFR 1-inch	1.0	$7,765	$6,028	N/A	N/A	**$13,794**
1-inch	1.7	$12,942	$10,047	N/A	N/A	**$22,990**
1.5-inch Turbine	4.0	$31,062	$24,113	N/A	N/A	**$55,175**
2-inch Turbine	5.3	$41,416	$32,151	N/A	N/A	**$73,566**
3-inch Turbine	11.7	$90,597	$70,329	N/A	N/A	**$160,927**
4-inch Turbine	21.0	$163,075	$126,593	N/A	N/A	**$289,668**
6-inch Turbine	46.7	$362,389	$281,317	N/A	N/A	**$643,706**
8-inch Turbine	80.0	$621,239	$482,258	N/A	N/A	**$1,103,497**
Recycled Water						
3/4-inch	1.0	$3,115	$0	N/A	N/A	**$3,115**
1-inch	1.7	$5,192	$0	N/A	N/A	**$5,192**
1.5-inch Turbine	4.0	$12,461	$0	N/A	N/A	**$12,461**
2-inch Turbine	5.3	$16,614	$0	N/A	N/A	**$16,614**
3-inch Turbine	11.7	$36,344	$0	N/A	N/A	**$36,344**
4-inch Turbine	21.0	$65,419	$0	N/A	N/A	**$65,419**
6-inch Turbine	46.7	$145,376	$0	N/A	N/A	**$145,376**
8-inch Turbine	80.0	$249,216	$0	N/A	N/A	**$249,216**

[6] The Gabbro Soils supplemental charge funds the protection and management of eight rare and endangered plants that grow in gabbro soil environments in the District's service, as required by the District's Water Right Permit 21112.
[7] The Line & Cover 3 supplemental charge recovers future users' fair share of debt service payments associated with the District's Line and Cover Reservoir Program. The Line & Cover 3 supplemental charge will expire on April 1, 2028.
[8] Single family residential (SFR) connections are required to have 1-inch meters for fire protection purposes, even though their demands could otherwise be met by a 3/4-inch meter. Therefore, they are charged at an amount equal to 3/4-inch meters.

Meter Size/ Connection Type	EDU Equivalency	Buy-In	Incremental Cost	Gabbro Soils[6]	Line & Cover 3[7]	Proposed FCC
Agricultural Metered Irrigation (AMI)						
3/4-inch	1.0	$2,321	$7,426	$345	$325	**$10,416**
1-inch	1.7	$3,868	$12,376	$575	$542	**$17,361**
1.5-inch Turbine	4.0	$9,283	$29,702	$1,380	$1,300	**$41,665**
2-inch Turbine	5.3	$12,377	$39,603	$1,840	$1,733	**$55,554**
3-inch Turbine	11.7	$27,075	$86,632	$4,025	$3,792	**$121,524**
4-inch Turbine	21.0	$48,736	$155,938	$7,245	$6,825	**$218,744**
6-inch Turbine	46.7	$108,302	$346,528	$16,100	$15,167	**$486,097**
8-inch Turbine	80.0	$185,660	$594,049	$27,600	$26,000	**$833,309**
Dual Plumbed Residential[9]						
1-inch Potable	1.0	$3,362	$16,411	$206	$194	**$20,173**
3/4-inch Recycled	1.0	$3,115	$0	N/A	N/A	**$3,115**
Total Dual Plumbed	*1.0*	*$6,477*	*$16,411*	*$206*	*$194*	***$23,288***

[9] All future dual plumbed residential customers are expected to have a 1-inch potable meter (i.e., one EDU for SFR) and a 3/4-inch recycled water meter (i.e., one EDU). Dual Plumbed Residential FCCs are therefore only shown for one EDU.

2. INTRODUCTION

2.1 OVERVIEW

DISTRICT OVERVIEW

El Dorado Irrigation District (referred to herein as the District) is a special district that provides potable water, wastewater, and recycled water services to a population of about 130,000 within a 220 square mile service area in El Dorado County ranging from El Dorado Hills eastwards to Pollock Pines. The District also operates satellite water systems in the communities of Strawberry and Outingdale. The District currently serves approximately 43,500 potable water services, 25,200 wastewater services, and 5,700 recycled water services. The District's water and wastewater systems consist of extensive distribution/collection lines, storage facilities, pump stations, and treatment plants. Additionally, the District operates hydroelectric facilities and owns several outdoor recreation sites.

FCC UPDATE STUDY OVERVIEW

New connections to the District's systems, as well as existing customers requiring increased capacity,[10] are subject to Facility Capacity Charges (FCCs). FCCs are one-time upfront fees and are distinct from bi-monthly rates and charges paid by existing customers (which are the District's primary revenue source). FCCs are necessary to ensure that existing users are not unfairly burdened by costs incurred to provide capacity to new users. The underlying principle is that "growth shall pay for growth." FCCs are often referred to by other retail water and wastewater agencies as capacity charges, connection fees, system development charges, etc. The District currently has adopted FCC schedules for six distinct categories of new connections:

1. Potable Water
2. Wastewater
3. Recycled Water
4. Agricultural Metered Irrigation (AMI)[11]
5. Dual Plumbed Residential[12]
6. Private Fire Service[13]

Public water and wastewater agencies typically conduct capacity charge nexus studies periodically to ensure that charges are fair, reasonable, and consistent with legal requirements. The District last conducted a capacity charge nexus study in 2013. Since 2013, the District has increased its adopted

[10] E.g., a customer replacing an existing water meter with a new larger water meter.
[11] Metered potable water connections used for agricultural irrigation purposes that meet the AMI criteria outlined in the District's Administrative Regulation (AR) 9024.
[12] Single family residential customers with both a potable water metered connection for indoor water needs and a recycled water metered connection for outdoor watering needs.
[13] Dedicated potable water connections for private fire protection purposes such as fire suppression sprinklers, private hydrants, fire standpipes, etc.

FCCs annually in proportion to changes in the Engineering News-Record's 20-city national average Construction Cost Index (CCI).

The District engaged Water Resources Economics, LLC (WRE) in early 2024 to conduct a new capacity charge nexus study (referred to herein as the 2024 FCC Update Study). The key objective of the 2024 FCC Update Study was to develop updated FCCs that are fair and equitable to both new development and existing users and are in alignment with legal requirements. In order to achieve this objective, WRE reviewed District data, determined the most appropriate FCC methodologies based on industry standards, and calculated proposed FCCs. The purpose of this 2024 FCC Update Study Report is to document WRE's recommendations and provide supporting calculations and information.

2.2 LEGAL REQUIREMENTS

Legal considerations relating to water and wastewater capacity charges in California focus heavily on California Government Code Section 66013(a), which states the following:

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, unless a question regarding the amount of the fee or charge imposed in excess of the estimated reasonable cost of providing the services or materials is submitted to, and approved by, a popular vote of two-thirds of those electors voting on the issue.

The practical implication is that public water and wastewater agencies in California must demonstrate that capacity charges paid by new users connecting to the system do not exceed the estimated reasonable cost of providing the services for which the charge is imposed and that the charge has a proportional benefit to the user. The primary means by which retail water and wastewater agencies in California address this requirement is by periodically conducting a capacity charge nexus study.

2.3 METHODOLOGY OVERVIEW

The overall purpose of a capacity charge is to equitably recover capital costs incurred by the agency to provide system capacity to new users. Water and wastewater capacity charges in California are typically developed based on one of three common methodologies outlined by the American Water Works Association (AWWA) in its *Manual of Water Supply Practices M1: Principles of Water Rates, Fees and Charges, Seventh Edition.* The primary factor that determines which methodology is most appropriate is whether existing system facilities have sufficient capacity to accommodate new users or if system capacity must be expanded to accommodate growth. The three methodologies outlined by AWWA are described below:

1. **Buy-in Method**: The Buy-in Method establishes capacity charges based on the value of the system's existing capital assets and is typically most appropriate when a system's current capacity is sufficient to serve both short-term and long-term projected demands. The rationale underlying the Buy-in Method is that new customers should pay to "buy-in" to

existing system capacity funded by past and current users. Under the Buy-in Method, a capacity charge functions as a mechanism for new users to gain access to system capacity at a status equal to that of existing customers. Under the Buy-in Method, capital assets are valued based on one of four approaches that vary based on whether cost inflation and depreciation are accounted for (see Table 2-1).

Table 2-1: Capital Asset Valuation Approaches for Buy-in Method

Asset Valuation Approaches	Adjusted for Inflation	Adjusted for Depreciation
Original Cost (OC)	No	No
Original Cost less Depreciation (OCLD)	No	Yes
Replacement Cost (RC)	Yes	No
Replacement Cost less Depreciation (RCLD)	Yes	Yes

In addition to capital assets, the Buy-in system valuation may also account for cash reserves, outstanding debt obligations, and other adjustments. The Buy-in system valuation is then divided by the total number of "units of service" to calculate the capacity charge. There are two main approaches to determining units of service. Under the "Equity Buy-in" approach, units of service are based on the total current "shares" in the system (i.e., total current customer connections). Under the "Capacity Buy-in" approach, units of service are based on total existing system capacity (both used and unused). The basic formula used to calculate capacity charges under the Buy-in Method is as follows:

$$Capacity\ Charge\ (per\ Unit\ of\ Service) = \frac{Capital\ Asset\ Value \pm Adjustments}{Units\ of\ Service}$$

2. **Incremental Cost Method**: The Incremental Cost Method establishes capacity charges based on the cost of planned capital expenditures required to expand system capacity and is typically most appropriate when a system's current capacity is already fully utilized by existing users. The rationale underlying the Incremental Cost Method is that new users should fund planned capital projects that are necessary due to growth in the service area. Under the Incremental Cost Method, a capacity charge ensures that existing users are not unfairly burdened with future capital costs incurred to accommodate growth.

   Under the Incremental Cost Method, an agency's Capital Improvement Plan (CIP) projects are evaluated so that capital expenditures attributable to growth can be identified. In addition to CIP project costs, the Incremental Cost basis may also include associated debt financing costs. The Incremental Cost basis is then divided by the number of new units of capacity resulting from system expansion to calculate the capacity charge. The basic formula used to calculate capacity charges under the Incremental Cost Method is as follows:

$$Capacity\ Charge\ (per\ Unit\ of\ Capacity) = \frac{Incremental\ CIP\ Costs + Debt\ Financing\ Costs}{Expanded\ Units\ of\ Capacity}$$

3. **Hybrid Method**: The Hybrid Method[14] establishes capacity charges based on a combination of the Buy-in Method and the Incremental Cost Method. The Hybrid Method is typically most appropriate when some existing capacity is available to new users, but capacity expansion is still necessary to accommodate long-term demands. The most appropriate manner in which the Buy-in and Incremental Cost components are applied under the Hybrid Method is often determined based on system-specific considerations (e.g., which existing and future facilities will new users utilize and how).

2.4 DISCLAIMERS

- All study projections are based on the best available data as of March 2024.
- All table values are rounded to the nearest digit shown unless stated otherwise. However, all calculations are based on precise values. Attempting to manually recreate the calculations described in this report from the values displayed in tables may therefore produce slightly different results.
- All proposed charges in this report are rounded to the nearest dollar.
- All proposed FCCs presented in this report were developed for a base year of 2024. If the proposed FCCs are adopted, annual CCI adjustments may be applied beginning on January 1, 2025.

[14] The Hybrid Method is referred to by the AWWA as the "Combined Cost Approach."

3. POTABLE WATER FCC UPDATE

3.1 CURRENT POTABLE WATER FCCS

The District's current Potable Water FCCs effective January 1, 2024 (see Table 3-1) are directly based on adopted FCCs developed during the 2013 FCC Update Study. Since 2013, Potable Water FCCs have been adjusted annually in proportion to changes in the CCI. Current Potable Water FCCs are differentiated by meter size for all customer classes except for multi-family residential (MFR), which are assessed per dwelling unit. FCCs increase by meter size in proportion to the number of associated equivalent dwelling units (EDUs).[15] The number of EDUs attributed to each meter size is proportional to the safe operating capacity in gallons per minute (gpm) of each meter size/type, as larger meters have higher capacity. However, single family residential (SFR) 1-inch meters are charged the same amount as ¾-inch meters. This is because SFR connections are required to have 1-inch meters for fire protection purposes, even though their demands could otherwise be met by a ¾-inch meter.

Current Potable Water FCCs are based on the Hybrid Method and consist of five distinct components. The "Buy-in for Treatment/Transmission/Storage" component is analogous to a Buy-in charge, as the "Future Capital Projects" component is to an Incremental Cost charge. The "New Water Supply Projects" component is essentially a Hybrid charge specific to the District's Project 184 storage and conveyance system and Permit 21112 water rights project (which was in progress at the time of the 2013 FCC Update Study). The "Gabbro Soils" and "Line & Cover 3" components are supplemental charges that are designed to recover specific costs allocable to new development and are outside of the scope of this study. Because they are included in the District's current Potable Water FCC schedule, they are included below.

Table 3-1: Current Potable Water FCCs (effective Jan. 1, 2024)

Meter Size/ Connection Type	EDUs	Buy-in for Treatment/ Transmission/ Storage	New Water Supply Projects	Future Capital Projects	Gabbro Soils	Line & Cover 3	Total Potable Water FCC
3/4-inch	1	$4,473	$4,444	$15,591	$345	$325	**$25,178**
SFR 1-inch	1	$4,473	$4,444	$15,591	$345	$325	**$25,178**
1-inch	2	$8,946	$8,888	$31,182	$690	$650	**$50,356**
1.5-inch	3	$13,419	$13,332	$46,773	$1,035	$975	**$75,534**
1.5-inch Turbine	4	$17,892	$17,776	$62,364	$1,380	$1,300	**$100,712**
2-inch	5	$22,365	$22,220	$77,955	$1,725	$1,625	**$125,890**
3-inch	12	$53,676	$53,328	$187,092	$4,140	$3,900	**$302,136**
4-inch	21	$93,933	$93,324	$327,411	$7,245	$6,825	**$528,738**
6-inch	43	$192,339	$191,092	$670,413	$14,835	$13,975	**$1,082,654**
6-inch Turbine	47	$210,231	$208,868	$732,777	$16,215	$15,275	**$1,183,366**
MFR Dwelling Unit	0.75	$3,355	$3,333	$11,693	$259	$244	**$18,884**

[15] One EDU is representative of the water demand from one single family residential detached dwelling.

3.2 PROPOSED POTABLE WATER FCC METHODOLOGY

PROPOSED METHODOLOGY

WRE worked closely with District staff to evaluate and develop the proposed methodology used to calculate Potable Water FCCs in this study. Because new potable water connections are expected to utilize existing potable water system facilities while also requiring substantial capacity expansion to meet long-term demands, the Hybrid Method was selected. Under the Hybrid Method, the proposed Potable Water FCCs include both a "Buy-in component" and an "Incremental Cost component." The proposed FCCs also retain the existing Gabbro Soils and Line & Cover 3 supplemental charges (see Section 3.5 for details).

NOTABLE CHANGES FROM 2013 FCC UPDATE METHODOLOGY

The proposed Potable Water FCC methodology is mostly consistent with the approach utilized in the 2013 FCC Update Study. However, the following methodological refinements were identified and incorporated into the proposed Potable Water FCC calculations:

1. **MFR FCCs based on meter size**: MFR FCCs are currently assessed per multi-family dwelling unit, with each multi-family dwelling unit set equal to 75% of one EDU. WRE recommends that Potable Water FCCs for new MFR connections be assessed based on meter size rather than the number of dwelling units. This proposed change will treat MFR connections consistently with all other customer classes, will simplify the FCC structure, and will better align the District with industry standards.
2. **Revised Buy-in units of service**: Buy-in units of service in the 2013 FCC Update Study were set equal to total existing plus future EDUs. To more closely align with the "Equity Buy-in" approach, WRE recommends that Buy-in units of service include existing EDUs only. This proposed change is more consistent with industry standards and best practices.
3. **Simplified Buy-in adjustments**: The 2013 FCC Update Study included adjustments to the Buy-in system valuation to account for existing cash reserves, outstanding debt principal, the present value of past debt issuance costs, and credits for past property tax contributions. WRE recommends that adjustments be incorporated for existing cash reserves and outstanding debt principal only. This proposed change will simplify the FCC methodology and better align the District with industry standards.
4. **Elimination of "New Water Supply Projects" Component**: The 2013 FCC Update Study included a separate Potable Water FCC component specific to the District's new water supply development efforts related to Project 184 and Water Rights Permit 21112. The water rights have now been secured and are an existing component of the District's total water supply portfolio. Associated capital projects have been completed and additional projects needed to convey this water supply such as the El Dorado Hills Water Treatment Plant expansion are identified in the District's adopted CIP and 2024 Water and Recycled Water Master Plan. There is no clear benefit or justification to continue to break out Project 184-related capital assets from all other potable water system capital assets. Therefore, WRE recommends

eliminating the New Water Supply Projects Component and simply including Project 184 assets within the Buy-in component. This proposed change will simplify the FCC methodology.

3.3 POTABLE WATER BUY-IN COMPONENT

BUY-IN CALCULATION OVERVIEW

The development of the Buy-in component for the proposed Potable Water FCCs consists of three primary steps:

1. **Determine the Buy-in Cost Basis**: The Buy-in cost basis represents the value of the existing system that the new user is buying into. It is based primarily on the value of potable water system capital assets, but also includes adjustments for cash reserves and outstanding debt principal payments.
2. **Determine the Buy-in Units of Service**: The units of service for the Potable Water FCC Buy-in are based on the number of EDUs currently connected to the potable water system. The number of EDUs is determined by utilizing meter capacity ratios to convert larger meter sizes into ¾-inch meter equivalencies.
3. **Calculate the Buy-in component per EDU**: The total Buy-in cost basis is divided by the total units of service to calculate the Buy-in component on a per EDU basis.

BUY-IN COST BASIS

Capital Asset Value

District staff provided a detailed registry of all District capital assets to WRE for evaluation. The asset registry included information regarding acquisition cost (i.e., original cost), net book value (i.e., original cost less depreciation), and year put in service for each individual capital asset listing. From this information, WRE converted all asset values from net book value into replacement cost less depreciation (RCLD) using the CCI to convert from nominal to real dollars (i.e., to adjust for inflation). RCLD was the selected asset valuation approach utilized in the 2013 FCC Update Study, and WRE recommended retaining the RCLD approach. Because RCLD adjusts asset values to account for inflation and depreciation, it is widely used to develop water and wastewater capacity charges in California and is often considered the most equitable approach.

After establishing asset values based on RCLD, WRE worked with District staff to determine which assets were allocable to Potable Water FCCs (see Table 3-2). All “Water Operations” assets were allocated to Potable Water FCCs, with the exception of transmission and distribution assets (see Table 3-2, Line 12). Transmission and distribution assets include smaller distribution waterlines of six-inch diameter or less that are in-kind contributions by the initial development and generally do not contribute to available system capacity for new connections. It is therefore appropriate to exclude these smaller distribution waterlines from the Potable Water FCC Buy-in cost basis. Because about 60% of potable waterlines (based on length) are larger than 6-inches, the same proportion of transmission and distribution asset value was included in the Buy-in cost basis (see Table 3-3 for

supporting details). Note that the exclusion of potable waterlines of 6-inches and smaller is consistent with the 2013 FCC Update Study.

All "Hydro Operations" assets were fully allocated to the Potable Water FCC Buy-in cost basis, as they pertain solely to potable water service. Conversely, all "Recycled Water Operations" assets and "Wastewater Operations" assets were excluded as they pertain to recycled and wastewater services, respectively. "General District Operations" assets pertain to administrative and overhead functions that benefit all service types and were therefore proportionally allocated 47.8% to potable water services. "Recreation" assets are indirectly associated with potable water service, as the District is required to provide recreational facilities as a condition of its hydroelectricity permit. However, WRE recommends the exclusion of "Recreation" assets from the Potable Water FCC Buy-in cost basis because "Recreation" assets do provide direct benefits (i.e., capacity) to new potable water customers, nor do they include core system facilities required to provide potable water service.

Table 3-2: Capital Asset Allocation to Potable Water Service

Line	Capital Asset Classification	Capital Asset Value (RCLD)	Allocation to Potable Water FCCs (%)	Allocation to Potable Water FCCs ($)
1	**Water Operations**			
2	LAND & EASEMENTS	$10,856,481	100.0%	$10,856,481
3	WATER RIGHTS	$7,878,194	100.0%	$7,878,194
4	SOURCE OF SUPPLY	$54,842,440	100.0%	$54,842,440
5	OFFICE FURNITURE & EQUIPMENT	$206,923	100.0%	$206,923
6	OFFICE BUILDINGS & IMPROVEMENTS	$91,569	100.0%	$91,569
7	LAND IMPROVEMENTS	$403,899	100.0%	$403,899
8	TREATMENT PLANT	$7,831,401	100.0%	$7,831,401
9	WATER FACILITIES	$10,435,139	100.0%	$10,435,139
10	INFRASTRUCTURE IMPROVEMENTS	$5,949,974	100.0%	$5,949,974
11	PUMPING PLANT	$4,154,294	100.0%	$4,154,294
12	TRANSMISSION/DISTRIBUTION	$438,157,531	59.8%	$261,851,187
13	VEHICLES	$3,104,587	100.0%	$3,104,587
14	EQUIPMENT & TOOLS	$2,972,487	100.0%	$2,972,487
15	IMPROVEMENTS SHORT LIFE 5 YRS	$34,651	100.0%	$34,651
16	IMPROVEMENTS SHORT LIFE 10 YRS	$1,078,401	100.0%	$1,078,401
17	**Subtotal**	**$547,997,971**	**67.8%**	**$371,691,626**
18				
19	**Hydro Operations**			
20	LAND & EASEMENTS	$3,513,323	100.0%	$3,513,323
21	DAMS & RESERVOIRS	$42,626,809	100.0%	$42,626,809
22	SOURCE OF SUPPLY	$5,890,245	100.0%	$5,890,245

Line	Capital Asset Classification	Capital Asset Value (RCLD)	Allocation to Potable Water FCCs (%)	Allocation to Potable Water FCCs ($)
23	OFFICE FURNITURE & EQUIPMENT	$0	100.0%	$0
24	OFFICE BUILDINGS & IMPROVEMENTS	$1,357,795	100.0%	$1,357,795
25	LAND IMPROVEMENTS	$251,728	100.0%	$251,728
26	TRANSMISSION/DISTRIBUTION	$39,183,864	100.0%	$39,183,864
27	HYDRO PLANT	$2,581,360	100.0%	$2,581,360
28	VEHICLES	$547,900	100.0%	$547,900
29	EQUIPMENT & TOOLS	$379,131	100.0%	$379,131
30	IMPROVEMENTS SHORT LIFE 5 YRS	$0	100.0%	$0
31	IMPROVEMENTS SHORT LIFE 10 YRS	$383,044	100.0%	$383,044
32	LARGE CONSTRUCTION PROJECT 100 YEARS	$65,125,556	100.0%	$65,125,556
33	**Subtotal**	**$161,840,755**	**100.0%**	**$161,840,755**
34				
35	**Recycled Water Operations**			
36	TREATMENT PLANT	$3,780,207	0.0%	$0
37	EQUIPMENT & TOOLS	$143,366	0.0%	$0
38	RECLAIMED WATER TRANSMISSION & DISTRIBUTION	$31,971,909	0.0%	$0
39	IMPROVEMENTS SHORT LIFE 10 YRS	$7,016	0.0%	$0
40	**Subtotal**	**$35,902,497**	**0.0%**	**$0**
41				
42	**Wastewater Operations**			
43	LAND & EASEMENTS	$1,592,853	0.0%	$0
44	DISPOSAL - LEACH FIELDS/SEPTIC	$1,418,011	0.0%	$0
45	OFFICE FURNITURE & EQUIPMENT	$132,830	0.0%	$0
46	OFFICE BUILDINGS & IMPROVEMENTS	$3,355,975	0.0%	$0
47	TREATMENT PLANT	$57,153,728	0.0%	$0
48	INFRASTRUCTURE IMPROVEMENTS	$1,492,658	0.0%	$0
49	TRANSMISSION/DISTRIBUTION	$235,183,926	0.0%	$0
50	COLLECTION SYSTEM-WW	$59,188,262	0.0%	$0
51	VEHICLES	$534,736	0.0%	$0
52	EQUIPMENT & TOOLS	$1,896,262	0.0%	$0
53	IMPROVEMENTS SHORT LIFE 5 YRS	$0	0.0%	$0
54	IMPROVEMENTS SHORT LIFE 10 YRS	$940,788	0.0%	$0
55	**Subtotal**	**$362,890,031**	**0.0%**	**$0**
56				
57	**General District Operations**			
58	LAND & EASEMENTS	$1,179,913	47.8%	$564,419
59	OFFICE FURNITURE & EQUIPMENT	$0	47.8%	$0

Line	Capital Asset Classification	Capital Asset Value (RCLD)	Allocation to Potable Water FCCs (%)	Allocation to Potable Water FCCs ($)
60	OFFICE BUILDINGS & IMPROVEMENTS	$17,750,915	47.8%	$8,491,259
61	VEHICLES	$287,413	47.8%	$137,486
62	EQUIPMENT & TOOLS	$153,089	47.8%	$73,231
63	IMPROVEMENTS SHORT LIFE 5 YRS	$0	47.8%	$0
64	IMPROVEMENTS SHORT LIFE 10 YRS	$4,505	47.8%	$2,155
65	**Subtotal**	**$19,375,836**	**47.8%**	**$9,268,550**
66				
67	**Recreation**			
68	LAND & EASEMENTS	$110,376	0.0%	$0
69	DAMS & RESERVOIRS	$1,169,202	0.0%	$0
70	OFFICE FURNITURE & EQUIPMENT	$0	0.0%	$0
71	OFFICE BUILDINGS & IMPROVEMENTS	$2,728,341	0.0%	$0
72	LAND IMPROVEMENTS	$44,382	0.0%	$0
73	TREATMENT PLANT	$83,668	0.0%	$0
74	TRANSMISSION/DISTRIBUTION	$2,497,925	0.0%	$0
75	VEHICLES	$30,270	0.0%	$0
76	EQUIPMENT & TOOLS	$30,847	0.0%	$0
77	IMPROVEMENTS SHORT LIFE 5 YRS	$0	0.0%	$0
78	IMPROVEMENTS SHORT LIFE 10 YRS	$19,298	0.0%	$0
79	**Subtotal**	**$6,714,309**	**0.0%**	**$0**
80				
81	**TOTAL**	**$1,134,721,399**	**47.8%**	**$542,800,932**

Table 3-3: Basis for Potable Water Transmission & Distribution Asset Exclusions

Description	Length (feet)	Length (%)
Potable Water Lines (6-inch diameter or smaller)	2,461,046	40.2%
Potable Water Lines (larger than 6-inch diameter)	3,655,160	59.8%
Total	**6,116,206**	**100.0%**

Cash Reserves

Current cash reserves held by the District were built up primarily through rates and charges collected from past and current users. Therefore, it is appropriate to include the value of cash reserves when quantifying the existing value of the potable water system. District staff provided WRE with the District's cash reserve levels as of January 1, 2024 (see Table 3-4). "Water Direct" cash reserves pertain specifically to potable water operations and were therefore fully allocated to the Potable Water FCC Buy-in cost basis.

Outstanding Debt Principal

A portion of the District's existing capital assets were financed by debt that is not fully paid off. The associated outstanding debt principal payments represent a long-term liability that new users will contribute towards in the form of bi-monthly rates and charges. It is therefore necessary to reduce the Buy-in cost basis by an amount equal to outstanding debt principal payments. District staff provided WRE with the District's outstanding debt principal as of January 1, 2024 (see Table 3-5). All allocations to the Potable Water FCC Buy-in cost basis are consistent with the District's existing debt service allocations to potable water service.

Table 3-4: Cash Reserves Allocation to Potable Water Service

Cash Reserves	Cash Reserves (as of Jan. 1, 2024)	Allocation to Potable Water FCCs (%)	Allocation to Potable Water FCCs ($)
Water Direct			
Operating Reserves	$10,501,829	100.0%	$10,501,829
Capital Replacement	$11,854,847	100.0%	$11,854,847
Routine Capital Replacement	$2,169,971	100.0%	$2,169,971
Self Insurance	$600,000	100.0%	$600,000
Subtotal	**$25,126,646**	**100.0%**	**$25,126,646**
Wastewater Direct			
Operating Reserves	$5,773,051	0.0%	$0
Capital Replacement	$9,225,224	0.0%	$0
Routine Capital Replacement	$1,250,152	0.0%	$0
Self Insurance	$400,000	0.0%	$0
Subtotal	**$16,648,427**	**0.0%**	**$0**
Total	**$41,775,073**	**60.1%**	**$25,126,646**

Table 3-5: Outstanding Debt Principal Allocation to Potable Water Service

Debt Issuance	Outstanding Debt Principal (as of Jan. 1, 2024)	Allocation to Potable Water FCCs (%)	Allocation to Potable Water FCCs ($)
Refunding Revenue Bonds, Series 2014A	$4,990,000	55.2%	$2,752,484
Refunding Revenue Bonds, Series 2016A	$3,825,000	67.6%	$2,585,700
Revenue Certificates of Participation, Series 2016B	$36,765,000	100.0%	$36,765,000
Refunding Revenue Bonds, Series 2016C	$25,240,000	61.0%	$15,383,780
Revenue Certificates of Participation, Series 2020A	$61,080,000	100.0%	$61,080,000
Refunding Revenue Bonds, Series 2020B	$3,430,000	100.0%	$3,430,000
Refunding Revenue Bonds, Series 2020C	$111,670,000	67.6%	$75,488,920
Refunding Revenue Bonds, Series 2020D	$76,825,000	60.6%	$46,525,220
Refunding Revenue Bonds, Series 2022A	$67,390,000	67.6%	$45,555,640
Total	**$391,215,000**	**74.0%**	**$289,566,744**

BUY-IN UNITS OF SERVICE

Buy-in units of service are based on the number of current EDUs connected to the District's potable water system. District staff provided the existing number of potable water connections by meter size and customer class as of 2024 (see Table 3-6). WRE calculated the number of EDUs by multiplying the number of meters at each meter size/type by the associated meter capacity ratio. Meter capacity ratios represent the safe operating capacity of each meter size/type relative to a ¾-inch meter, as larger meters have capacities. The meter capacity ratios utilized were consistent with the District's 2023 Cost of Service Study (used to establish currently adopted bi-monthly rates and charges) and are based on AWWA-rated safe operating capacities in gpm by meter size and type.

Table 3-6: Existing Potable Water EDUs

Meter Size/ Type	Safe Operating Capacity (gpm)	Meter Capacity Ratio	Existing Number of Meters	Existing Number of EDUs
5/8-inch[16]	20	1.0	3,040	3,040
3/4-inch	30	1.0	29,475	29,475
SFR 1-inch[17]	50	1.0	3,580	3,580
1-inch	50	1.7	639	1,065
1.5-inch	100	3.3	404	1,347
1.5-inch Turbine	120	4.0	109	436
2-inch	160	5.3	232	1,237
2-inch Turbine	160	5.3	332	1,771
3-inch	320	10.7	17	181
3-inch Turbine	350	11.7	57	665
4-inch	500	16.7	9	150
4-inch Turbine	630	21.0	53	1,113
6-inch	1,000	33.3	10	333
6-inch Turbine	1,400	46.7	18	840
8-inch Turbine	2,400	80.0	4	320
10-inch Turbine	3,800	126.7	1	127
12-inch Turbine	5,000	166.7	0	0
14-inch Turbine	6,000	200.0	1	200
3/4-inch (Dual Plumbed)[18]	30	0.6	5,047	3,057
1-inch (Dual Plumbed)[19]	50	1.0	458	462
Total			**43,486**	**49,400**

BUY-IN COMPONENT CALCULATION

The Potable Water Buy-in component per EDU (see Table 3-7) was calculated by dividing the individual components of the cost basis (per Table 3-2, Table 3-4, and Table 3-5) by the existing number of EDUS (per Table 3-6).

[16] The meter capacity ratio for 5/8-inch meters is set equal to 3/4-inch ratio, as all 5/8-inch meters will eventually be replaced by 3/4-inch or SFR 1-inch meters.

[17] SFR connections are required to have 1-inch meters for fire protection purposes, even though their demands could otherwise be met by a 3/4-inch meter. Therefore, they are charged at an amount equal to 3/4-inch meters.

[18] Dual plumbed customers use approximately 60% of potable water as single plumbed potable customers, as dual plumbed outdoor water demand is met by recycled water. Therefore, dual plumbed potable meter capacity ratios are adjusted accordingly by multiplying by a 60% potable water demand factor.

[19] See above footnote.

Table 3-7: Potable Water Buy-in Calculation

Buy-In Component	Cost Basis	Existing EDUs	Buy-in (per EDU)
Capital Asset Value (RCLD)	$542,800,932	49,400	$10,988
Cash Reserves	$25,126,646	49,400	$509
Less Outstanding Debt Principal	($289,566,744)	49,400	($5,862)
Total	**$278,360,834**		**$5,635**

3.4 POTABLE WATER COST INCREMENTAL COMPONENT

INCREMENTAL COST CALCULATION OVERVIEW

The development of the Incremental Cost component for the proposed Potable Water FCC consists of three primary steps:

1. **Determine the Incremental Cost Basis**: The Incremental cost basis reflects future capital spending required to expand system capacity to accommodate new users. It is based on the projected cost of growth-related CIP projects and any associated debt financing costs.
2. **Determine the Incremental Cost Units of Service**: The units of service for the Potable Water FCC Incremental Cost component are based on number of EDUs accommodated by expanded system capacity.
3. **Calculate the Incremental Cost component per EDU**: The total Incremental cost basis is divided by the total units of service to calculate the Incremental Cost component on a per EDU basis.

INCREMENTAL COST BASIS

CIP Project Costs

District staff identified select CIP projects from the 2024 Water and Recycled Water Master Plan to include in the Incremental cost basis. District staff only selected CIP projects that are needed to accommodate new users and that can reasonably be constructed within the next ten years (see Table 3-8). The projects include the planned El Dorado Hills Water Treatment Plant (EDHWTP) expansion, Oak Ridge Pump Station, Francisco Drive Water Main, and the anticipated first segment of a gravity transmission pipeline (Res C to Res 7) that is needed to improve current transmission bottlenecks. Selected CIP projects that solely benefit future growth were fully allocated to Potable Water FCCs. Most EDHWTP projects were allocated to Potable Water FCCs based on the proportion of expanded plant capacity available to accommodate new users.[20] Additionally, District staff estimated that one-half of Project PW-P-02 (see Table 3-8, Line 25) is attributable to future users.

[20] EDHWTP new capacity (4.5 MGD) ÷ total capacity (24 MGD) = 18.8%

Table 3-8: Selected Potable Water Incremental CIP Projects

Line	Project	2024 Water Master Plan Project Cost	Allocation to Potable Water FCCs (%)	Allocation to Potable Water FCCs ($)
1	**EDHWTP Priority 1 Projects**			
2	EDH-1 - Washwater Phase 1	$7,100,000	18.8%	$1,331,250
3	EDH-2 - Generator and Electrical Service Relocation	$3,100,000	18.8%	$581,250
4	EDH-3 - Plate Settler Relocation	$2,700,000	18.8%	$506,250
5	EDH-4 - Site Demo and Preparation	$2,900,000	18.8%	$543,750
6	EDH-7 - Flash Mix and Raw Water Pipe Re-Route	$1,600,000	18.8%	$300,000
7	EDH-8 - Pretreatment Trains 1-2	$24,800,000	18.8%	$4,650,000
8	EDH-9 - Filters 1-5	$29,300,000	18.8%	$5,493,750
9	EDH-12 - Convert Raw Water Head Tank into Backwash Supply Tank	$2,300,000	18.8%	$431,250
10	EDH-13 - Polyphosphate Storage Improvements	$200,000	18.8%	$37,500
11	EDH-19 - High Lift Pump Station Expansion - Phase 1	$9,800,000	100.0%	$9,800,000
12	EDH-20 - Clearwell Expansion for 24 mgd	$4,700,000	100.0%	$4,700,000
13	**Subtotal**	**$88,500,000**		**$28,375,000**
14				
15	**EDHWTP Priority 2 Projects**			
16	EDH-5 - Washwater Phase 2	$4,100,000	18.8%	$768,750
17	EDH-6 - Caustic Storage Facility	$2,700,000	18.8%	$506,250
18	EDH-14 - Central Chemical Facility	$5,600,000	18.8%	$1,050,000
19	EDH-15 - PAC Storage and Feed Facility	$3,000,000	18.8%	$562,500
20	**Subtotal**	**$15,400,000**		**$2,887,500**
21				
22	**Other Selected Water Master Plan Projects**			
23	PW-P-01: Water main upsize between EDH WTP High Lift PS and Oak Ridge Tanks	$32,632,000	100.0%	$32,632,000
24	PW-PS-01: Oak Ridge Pump Station No. 2	$8,673,000	100.0%	$8,673,000
25	PW-P-02: Water main upsize along existing POM from Res C to Res 7	$101,682,000	50.0%	$50,841,000
26	**Subtotal**	**$142,987,000**		**$92,146,000**
27				
28	**Total**	**$246,887,000**		**$123,408,500**

Debt Financing Costs

The District expects to issue new debt to finance the construction of EDHWTP Priority 1 capital projects within the next five years. WRE added estimated debt financing costs to the Incremental cost basis to ensure that current potable water users are not unfairly burdened by new debt obligations associated with projects that benefit growth. The estimated debt financing costs assume that all EDHWTP Priority 1 project costs attributable to Potable Water FCCs will be debt funded. Based on

new debt assumptions consistent with the 2023 Cost of Service Study, WRE estimated total interest payments attributable to the Incremental cost basis (see Table 3-9).

Table 3-9: Potable Water Incremental CIP Debt Financing Assumptions

Description	Value
Debt Financed Project Costs[21]	$28,375,000
Term	30 years
Interest Rate	6.50%
Issuance Costs (% of Issuance)	$0
Total Estimated Financing Costs[22]	**$37,562,804**

INCREMENTAL UNITS OF SERVICE

The Incremental units of service represent future capacity resulting from potable water system expansion. WRE calculated the units of service for the selected incremental CIP projects based on assumed capacity expansions (per the 2024 Water and Recycled Water Master Plan), water demand factors, peaking factors, and service area growth rates (see Table 3-10). For incremental CIP projects associated with EDHWTP expansion, the units of service reflect future EDUs accommodated by the 4.5 MGD plant expansion. Future EDUs were similarly estimated for Oak Ridge Pump Station No. 2 based on the planned capacity of the pump station. For all other incremental CIP, future EDUs were projected by estimating new EDUs connecting to the potable water system through 2045 based on an assumed annual growth rate of 0.62% (consistent with El Dorado County's recent Traffic Impact Fee Study).

[21] Equal to EDHWTP Priority 1 CIP allocated to Potable Water FCC (per Table 3-8).
[22] Interest only; estimated based on level principal plus interest payments over 30 years.

Table 3-10: Future Potable Water EDUs Served

Line	Description	Value
1	**EDHWTP - Future EDUs Served**	
2	Existing EDHWTP Capacity (mgd)	19.5
3	Future EDHWTP Capacity (mgd)	24.0
4	Expanded EDHWTP Capacity (mgd)[23]	4.5
5	Single Family Residential Average Unit Demand (AFY)[24]	0.44
6	Maximum Day Peaking Factor[25]	2.00
7	Future EDUs Served[26]	5,728
8		
9	**Oak Ridge Pump Station No. 2 - Future EDUs Served**	
10	Oak Ridge Pump Station No. 2 Capacity (gpm)	2,000
11	Single Family Residential Average Unit Demand (AFY)	0.44
12	Maximum Day Peaking Factor	2.00
13	Future EDUs Served[27]	3,666
14		
15	**All Other Incremental CIP - Future EDUs Served**	
16	Existing Potable Water Equivalent Meter Units	49,400
17	Annual Growth Rate[28]	0.62%
18	Cumulative Growth Rate from 2024-2045	13.86%
19	Future EDUs Served[29]	6,847

INCREMENTAL COST COMPONENT CALCULATION

The Potable Water Incremental Cost component per EDU (see Table 3-11) was calculated by dividing the individual components of the Incremental cost basis (per Table 3-8 and Table 3-9) by the number of future EDUS served (per Table 3-10).

[23] =[Line 3] – [Line 2]
[24] SFR demand for future customers in the El Dorado Hills service area per the District's 2020 Urban Water Management Plan (UWMP Table 4-10).
[25] Systemwide Maximum Day Peaking factor per the District's Draft 2024 Water and Recycled Water Master Plan (WMP Table 3.13).
[26] =[Line 4] ÷ [(Line 5) × (Line 6) × (0.00089 mgd per AFY conversion factor)]
[27] =[Line 10] ÷ [(Line 11) × (Line 12) × (0.61996 gpm per AFY conversion factor)]
[28] Residential growth rate per most recent El Dorado County Traffic Impact Fee Study.
[29] =[Line 16] × [Line 18]

Table 3-11: Potable Water Incremental Cost Calculation

Incremental Cost Component	Cost Basis	Future EDUs Served	Incremental Cost (per EDU)
EDHWTP Priority 1 Project Costs (including Financing Costs)	$65,937,804	5,728	$11,511
EDHWTP Priority 2 Project Costs	$2,887,500	5,728	$504
PW-P-01: Water main upsize between EDH WTP High Lift PS and Oak Ridge Tanks	$32,632,000	5,728	$5,697
PW-PS-01: Oak Ridge Pump Station No. 2	$8,673,000	3,666	$2,366
PW-P-02: Water main upsize along existing POM from Res C to Res 7	$50,841,000	6,847	$7,426
Total	**$160,971,304**		**$27,504**

3.5 POTABLE WATER SUPPLEMENTAL CHARGES

The District currently recovers two supplemental charges as part of the currently adopted Potable Water FCC schedule (see Table 3-12). Each supplemental charge is designed to recover specific District costs attributable to new potable water connections. No changes to the existing supplemental charges were recommended as part of this 2024 FCC Update Study. All proposed Potable Water FCCs presented in this report include the two existing supplemental charges, as the District plans to continue to collect these charges as part of the Potable Water FCCs.

GABBRO SOILS SUPPLEMENTAL CHARGE

The District implemented the Gabbro Soils supplemental charge in 2001 to satisfy the conditions of Water Right Permit 21112, which allows the District to divert water out of Folsom Reservoir. In order to exercise Water Right Permit 21112, the District was required to preserve habitat in western El Dorado County that may be potentially impacted by expansion of the District's water services. Revenues generated by the Gabbro Soils supplemental charge fund the protection and management of eight rare and endangered plants that grow in gabbro soil environments in the District's service area, including at Pine Hill Preserve. The Gabbro Soils supplemental charge will remain in effect until the full amount of water available under Permit 21112 has been allocated through the sale of water meters.

LINE & COVER 3 SUPPLEMENTAL CHARGE

The District implemented the Line & Cover 3 supplemental charge in 2008 to recover future users' fair share of debt service payments associated with the District's Line and Cover Reservoir Program. The Line & Cover 3 supplemental charge will expire on April 1, 2028.

Table 3-12: Potable Water Supplemental Charges

Supplemental Charges	Current Charge (per EDU)
Gabbro Soils	$345
Line & Cover 3	$325

3.6 PROPOSED POTABLE WATER FCCS

PROPOSED POTABLE WATER FCC CALCULATION

The proposed Potable Water FCC per EDU (see Table 3-13) was calculated by summing the Buy-in component (per Table 3-7), Incremental Cost component (per Table 3-11), and two supplemental charges (per Table 3-12). The proposed Potable Water FCCs were developed using 2024 as a base year. Therefore, the District may apply annual CCI adjustments to the proposed FCCs beginning January 1, 2025, and each year thereafter.

The proposed Potable Water FCC per EDU is about $8,600 higher than the current FCC (see Table 3-14). The primary reason for the increase is the substantial amount of growth-related CIP identified in the 2024 Water and Recycled Water Master Plan. Even after limiting incremental CIP costs to critical CIP projects needed within the next ten years, the Incremental Cost component has increased significantly relative to the 2013 FCC Update Study. The proposed increases are necessary however to ensure that current potable water users are not unfairly burdened with near-term growth-related capital costs.

Table 3-13: Proposed Potable Water FCC Calculation (per EDU)

FCC Component	Proposed FCC (per EDU)
Buy-In	$5,635
Incremental Cost	$27,504
Gabbro Soils Supplemental Charge	$345
Line & Cover 3 Supplemental Charge	$325
Total	**$33,809**

Table 3-14: Comparison of Current and Proposed Potable Water FCCs (per EDU)

Comparison to Current Potable Water FCCs	
Proposed FCC (per EDU)	$33,809
Current FCC (per EDU)	$25,178
Difference ($)	*$8,631*

PROPOSED POTABLE WATER FCC CALCULATION BY METER SIZE/TYPE

Proposed Potable Water FCCs by meter size and type (see Table 3-15) were calculated by multiplying each FCC component per EDU (per Table 3-13) by the associated EDU equivalency (per Table 3-6). The EDU equivalency represents the AWWA-rated capacity of each meter size/type relative to a ¾-inch meter. This approach ensures that new potable water customers are appropriately charged in proportion to the capacity of their water meter. Note that the proposed EDU equivalencies for 1-inch and 6-inch Turbine meters are different from the current FCC schedule, as they are based on precise rather than rounded AWWA-rated meter capacity ratios.[30]

Proposed FCCs were only developed for meter sizes and types that District staff will install in the future, which may differ from the size and type of some existing meters. For example, the District only plans to install Turbine type meters for connections of 1.5-inch or larger moving forward. Because the existing Potable Water FCC schedule includes FCCs for non-Turbine type meters only for certain meter sizes, a direct comparison of proposed versus current FCCs is not available for all meter sizes and types (see Table 3-16).

Table 3-15: Proposed Potable Water FCCs

Meter Size/Type	EDU Equivalency	Buy-In	Incremental Cost	Gabbro Soils	Line & Cover 3	Proposed FCC
3/4-inch	1.0	$5,635	$27,504	$345	$325	**$33,809**
SFR 1-inch	1.0	$5,635	$27,504	$345	$325	**$33,809**
1-inch	1.7	$9,391	$45,840	$575	$542	**$56,348**
1.5-inch Turbine	4.0	$22,540	$110,016	$1,380	$1,300	**$135,235**
2-inch Turbine	5.3	$30,053	$146,688	$1,840	$1,733	**$180,314**
3-inch Turbine	11.7	$65,740	$320,879	$4,025	$3,792	**$394,436**
4-inch Turbine	21.0	$118,332	$577,583	$7,245	$6,825	**$709,985**
6-inch Turbine	46.7	$262,961	$1,283,517	$16,100	$15,167	**$1,577,745**
8-inch Turbine	80.0	$450,790	$2,200,315	$27,600	$26,000	**$2,704,706**

Table 3-16: Comparison of Current and Proposed Potable Water FCCs

Meter Size/Type	Proposed FCC	Current FCC	Difference ($)
3/4-inch	**$33,809**	$25,178	*$8,631*
SFR 1-inch	**$33,809**	$25,178	*$8,631*
1-inch	**$56,348**	$50,356	*$5,992*
1.5-inch Turbine	**$135,235**	$100,712	*$34,523*
2-inch Turbine	**$180,314**	N/A	*N/A*
3-inch Turbine	**$394,436**	N/A	*N/A*
4-inch Turbine	**$709,985**	N/A	*N/A*
6-inch Turbine	**$1,577,745**	$1,183,366	*$394,379*
8-inch Turbine	**$2,704,706**	N/A	*N/A*

[30] The proposed EDU equivalency is 1.7 rather than 2 for 1-inch meters and 46.7 rather than 47 for 6-inch Turbine meters.

4. WASTEWATER FCC UPDATE

4.1 CURRENT WASTEWATER FCCS

The District's current Wastewater FCCs effective January 1, 2024 (see Table 4-1) are directly based on adopted FCCs developed during the 2013 FCC Update Study. Since 2013, Wastewater FCCs have been adjusted annually in proportion to changes in the CCI. Current Wastewater FCCs are differentiated by water meter size based on meter capacity ratios for all customer classes except for MFR, which are assessed per dwelling unit. This is consistent with how current Potable Water FCCs are assessed. Current Wastewater FCCs are based on the Hybrid Method and consist of two components. The "Buy-in for Collection/Pumping/Treatment" component is analogous to a Buy-in charge, as the "Future Capital Projects" component is to an Incremental Cost charge. The total Wastewater FCC equals the sum of the two components.

Table 4-1: Current Wastewater FCCs (effective Jan. 1, 2024)

Meter Size/Connection Type	EDUs	Buy-in for Collection/ Pumping/ Treatment	Future Capital Projects	Total Wastewater FCC
3/4-inch	1	$8,393	$9,541	**$17,934**
1-inch	2	$16,786	$19,082	**$35,868**
1.5-inch	3	$25,179	$28,623	**$53,802**
1.5-inch Turbine	4	$33,572	$38,164	**$71,736**
2-inch	5	$41,965	$47,705	**$89,670**
3-inch	12	$100,716	$114,492	**$215,208**
4-inch	21	$176,253	$200,361	**$376,614**
6-inch	43	$360,899	$410,263	**$771,162**
6-inch Turbine	47	$394,471	$448,427	**$842,898**
MFR Dwelling Unit	0.75	$6,295	$7,156	**$13,451**

4.2 PROPOSED WASTEWATER FCC METHODOLOGY

PROPOSED METHODOLOGY

WRE worked closely with District staff to evaluate and develop the proposed methodology used to calculate Wastewater FCCs in this study. Similar to the potable system, new wastewater connections are expected to utilize existing system facilities while also requiring substantial capacity expansion to meet long-term demands. Therefore, the Hybrid Method was retained from 2013 FCC Update Study. Under the selected Hybrid Method, the proposed Wastewater FCCs include both a "Buy-in component" and an "Incremental Cost component." Overall, the proposed methodology used to develop proposed Wastewater FCCs is closely consistent with the proposed Potable Water FCC methodology outlined in Section 3.

NOTABLE CHANGES FROM 2013 FCC UPDATE METHODOLOGY

The proposed Wastewater FCC methodology is mostly consistent with the approach utilized in the 2013 FCC Update Study. However, the following methodological refinements were identified and incorporated into the proposed Wastewater FCC calculations. Note that all three notable refinements to the Wastewater FCC methodology are consistent with proposed changes to the Potable Water FCC methodology.

1. **MFR FCCs based on meter size**: MFR FCCs are currently assessed per multi-family dwelling unit, with each multi-family dwelling unit set equal to 75% of one EDU. WRE recommends that Wastewater FCCs for new MFR connections be assessed based on meter size rather than the number of dwelling units. This proposed change will treat MFR connections consistently with all other customer classes, will simplify the FCC structure, and will better align the District with industry standards.
2. **Revised Buy-in units of service**: Buy-in units of service in the 2013 FCC Update Study were set equal to total existing plus future EDUs. To more closely align with the "Equity Buy-in" approach, WRE recommends that Buy-in units of service include existing EDUs only. This proposed change is more consistent with industry standards and best practices.
3. **Simplified Buy-in adjustments**: The 2013 FCC Update Study included adjustments to the Buy-in system valuation to account for existing cash reserves, outstanding debt principal, the present value of past debt issuance costs, and credits for past property tax contributions. WRE recommends that adjustments be incorporated for existing cash reserves and outstanding debt principal only. This proposed change will simplify the FCC methodology and better align the District with industry standards.

4.3 WASTEWATER BUY-IN COMPONENT

BUY-IN CALCULATION OVERVIEW

The development of the Buy-in component for the proposed Wastewater FCCs consists of three primary steps:

1. **Determine the Buy-in Cost Basis**: The Buy-in cost basis represents the value of the existing system that the new user is buying into. It is based primarily on the value of wastewater system capital assets, but also includes adjustments for cash reserves and outstanding debt principal payments.
2. **Determine the Buy-in Units of Service**: The units of service for the Wastewater FCC Buy-in are based on the number of EDUs currently connected to the wastewater system. The number of EDUs is determined by utilizing meter capacity ratios to convert larger water meter sizes into ¾-inch meter equivalencies.
3. **Calculate the Buy-in component per EDU**: The total Buy-in cost basis is divided by the total units of service to calculate the Buy-in component on a per EDU basis.

BUY-IN COST BASIS

Capital Asset Value

The same asset valuation approach (RCLD) that was used to quantify potable water capital assets was applied to develop the Wastewater FCC Buy-in cost basis (refer to Section 3.3 for details). WRE worked with District staff to determine which District assets were allocable to Wastewater FCCs (see Table 4-2). All "Water Operations" assets, "Hydro Operations" assets, and "Recycled Water Operations" assets were excluded, as they pertain solely to either potable or recycled water services. All "Wastewater Operations" assets were fully allocated to the Wastewater FCC Buy-in cost basis, with the exception of collection system assets (see Table 4-2, Line 50). Wastewater collection system assets are comprised of smaller sewer collection lines that are in-kind contributions by the initial development and do not contribute to available system capacity for new connections. All collection system assets are therefore excluded, which is consistent with the 2013 FCC Update Study. "General District Operations" assets pertain to administrative and overhead functions that benefit all service types and were therefore proportionally allocated 27.2% to wastewater services. Lastly, Recreation" assets were excluded as they do not provide specific benefits to wastewater services.

Table 4-2: Capital Asset Allocation to Wastewater Service

Line	Capital Asset Classification	Capital Asset Value (RCLD)	Allocation to Wastewater FCCs (%)	Allocation to Wastewater FCCs ($)
1	**Water Operations**			
2	LAND & EASEMENTS	$10,856,481	0.0%	$0
3	WATER RIGHTS	$7,878,194	0.0%	$0
4	SOURCE OF SUPPLY	$54,842,440	0.0%	$0
5	OFFICE FURNITURE & EQUIPMENT	$206,923	0.0%	$0
6	OFFICE BUILDINGS & IMPROVEMENTS	$91,569	0.0%	$0
7	LAND IMPROVEMENTS	$403,899	0.0%	$0
8	TREATMENT PLANT	$7,831,401	0.0%	$0
9	WATER FACILITIES	$10,435,139	0.0%	$0
10	INFRASTRUCTURE IMPROVEMENTS	$5,949,974	0.0%	$0
11	PUMPING PLANT	$4,154,294	0.0%	$0
12	TRANSMISSION/DISTRIBUTION	$438,157,531	0.0%	$0
13	VEHICLES	$3,104,587	0.0%	$0
14	EQUIPMENT & TOOLS	$2,972,487	0.0%	$0
15	IMPROVEMENTS SHORT LIFE 5 YRS	$34,651	0.0%	$0
16	IMPROVEMENTS SHORT LIFE 10 YRS	$1,078,401	0.0%	$0
17	**Subtotal**	**$547,997,971**	**0.0%**	**$0**
18				
19	**Hydro Operations**			
20	LAND & EASEMENTS	$3,513,323	0.0%	$0
21	DAMS & RESERVOIRS	$42,626,809	0.0%	$0

Line	Capital Asset Classification	Capital Asset Value (RCLD)	Allocation to Wastewater FCCs (%)	Allocation to Wastewater FCCs ($)
22	SOURCE OF SUPPLY	$5,890,245	0.0%	$0
23	OFFICE FURNITURE & EQUIPMENT	$0	0.0%	$0
24	OFFICE BUILDINGS & IMPROVEMENTS	$1,357,795	0.0%	$0
25	LAND IMPROVEMENTS	$251,728	0.0%	$0
26	TRANSMISSION/DISTRIBUTION	$39,183,864	0.0%	$0
27	HYDRO PLANT	$2,581,360	0.0%	$0
28	VEHICLES	$547,900	0.0%	$0
29	EQUIPMENT & TOOLS	$379,131	0.0%	$0
30	IMPROVEMENTS SHORT LIFE 5 YRS	$0	0.0%	$0
31	IMPROVEMENTS SHORT LIFE 10 YRS	$383,044	0.0%	$0
32	LARGE CONSTRUCTION PROJECT 100 YEARS	$65,125,556	0.0%	$0
33	**Subtotal**	**$161,840,755**	**0.0%**	**$0**
34				
35	**Recycled Water Operations**			
36	TREATMENT PLANT	$3,780,207	0.0%	$0
37	EQUIPMENT & TOOLS	$143,366	0.0%	$0
38	RECLAIMED WATER TRANSMISSION & DISTRIBUTION	$31,971,909	0.0%	$0
39	IMPROVEMENTS SHORT LIFE 10 YRS	$7,016	0.0%	$0
40	**Subtotal**	**$35,902,497**	**0.0%**	**$0**
41				
42	**Wastewater Operations**			
43	LAND & EASEMENTS	$1,592,853	100.0%	$1,592,853
44	DISPOSAL - LEACH FIELDS/SEPTIC	$1,418,011	100.0%	$1,418,011
45	OFFICE FURNITURE & EQUIPMENT	$132,830	100.0%	$132,830
46	OFFICE BUILDINGS & IMPROVEMENTS	$3,355,975	100.0%	$3,355,975
47	TREATMENT PLANT	$57,153,728	100.0%	$57,153,728
48	INFRASTRUCTURE IMPROVEMENTS	$1,492,658	100.0%	$1,492,658
49	TRANSMISSION/DISTRIBUTION	$235,183,926	100.0%	$235,183,926
50	COLLECTION SYSTEM-WW	$59,188,262	0.0%	$0
51	VEHICLES	$534,736	100.0%	$534,736
52	EQUIPMENT & TOOLS	$1,896,262	100.0%	$1,896,262
53	IMPROVEMENTS SHORT LIFE 5 YRS	$0	100.0%	$0
54	IMPROVEMENTS SHORT LIFE 10 YRS	$940,788	100.0%	$940,788
55	**Subtotal**	**$362,890,031**	**83.7%**	**$303,701,768**
56				
57	**General District Operations**			
58	LAND & EASEMENTS	$1,179,913	27.2%	$321,283

Line	Capital Asset Classification	Capital Asset Value (RCLD)	Allocation to Wastewater FCCs (%)	Allocation to Wastewater FCCs ($)
59	OFFICE FURNITURE & EQUIPMENT	$0	27.2%	$0
60	OFFICE BUILDINGS & IMPROVEMENTS	$17,750,915	27.2%	$4,833,466
61	VEHICLES	$287,413	27.2%	$78,261
62	EQUIPMENT & TOOLS	$153,089	27.2%	$41,685
63	IMPROVEMENTS SHORT LIFE 5 YRS	$0	27.2%	$0
64	IMPROVEMENTS SHORT LIFE 10 YRS	$4,505	27.2%	$1,227
65	**Subtotal**	**$19,375,836**	**27.2%**	**$5,275,922**
66				
67	**Recreation**			
68	LAND & EASEMENTS	$110,376	0.0%	$0
69	DAMS & RESERVOIRS	$1,169,202	0.0%	$0
70	OFFICE FURNITURE & EQUIPMENT	$0	0.0%	$0
71	OFFICE BUILDINGS & IMPROVEMENTS	$2,728,341	0.0%	$0
72	LAND IMPROVEMENTS	$44,382	0.0%	$0
73	TREATMENT PLANT	$83,668	0.0%	$0
74	TRANSMISSION/DISTRIBUTION	$2,497,925	0.0%	$0
75	VEHICLES	$30,270	0.0%	$0
76	EQUIPMENT & TOOLS	$30,847	0.0%	$0
77	IMPROVEMENTS SHORT LIFE 5 YRS	$0	0.0%	$0
78	IMPROVEMENTS SHORT LIFE 10 YRS	$19,298	0.0%	$0
79	**Subtotal**	**$6,714,309**	**0.0%**	**$0**
80				
81	**TOTAL**	**$1,134,721,399**	**27.2%**	**$308,977,690**

Cash Reserves

Current cash reserves held by the District were built up in part through rates and charges collected from past and current wastewater users. Therefore, it is appropriate to include the value of cash reserves when quantifying the existing value of the wastewater system. District staff provided WRE with the District's cash reserve levels as of January 1, 2024 (see Table 4-3). "Water Direct" cash reserves pertain to potable water services only and were therefore excluded. "Wastewater Direct" cash reserves pertain to both wastewater and recycled water operations and were therefore allocated between the Wastewater FCC Buy-in cost basis and Recycled Water FCC Buy-in cost basis in proportion to capital asset values attributed to each service.[31]

[31] Capital assets attributable to Wastewater FCCs ($309.0 million per Table 4-2) comprise 94.3% of capital assets attributable to either Wastewater FCCs or Recycled Water FCCs ($327.7 million per Table 4-2 and Table 5-2). Therefore, 94.3% of "Wastewater Direct" reserves were allocated to Wastewater FCCs.

Outstanding Debt Principal

A portion of the District's existing wastewater capital assets were financed by debt that is not fully paid off. The associated outstanding debt principal payments represent a long-term liability that new wastewater users will contribute towards in the form of bi-monthly rates and charges. It is therefore necessary to reduce the Buy-in cost basis by an amount equal to outstanding debt principal payments. District staff provided WRE with the District's outstanding debt principal as of January 1, 2024 (see Table 4-4). All allocations to the Wastewater FCC Buy-in cost basis are consistent with the District's existing debt service allocations to wastewater service.

Table 4-3: Cash Reserves Allocation to Wastewater Service

Cash Reserves	Cash Reserves (as of Jan. 1, 2024)	Allocation to Wastewater FCCs (%)	Allocation to Wastewater FCCs ($)
Water Direct			
Operating Reserves	$10,501,829	0.0%	$0
Capital Replacement	$11,854,847	0.0%	$0
Routine Capital Replacement	$2,169,971	0.0%	$0
Self Insurance	$600,000	0.0%	$0
Subtotal	**$25,126,646**	**0.0%**	**$0**
Wastewater Direct			
Operating Reserves	$5,773,051	94.3%	$5,443,435
Capital Replacement	$9,225,224	94.3%	$8,698,504
Routine Capital Replacement	$1,250,152	94.3%	$1,178,774
Self Insurance	$400,000	94.3%	$377,162
Subtotal	**$16,648,427**	**94.3%**	**$15,697,874**
Total	**$41,775,073**	**37.6%**	**$15,697,874**

Table 4-4: Outstanding Debt Principal Allocation to Wastewater Service

Debt Issuance	Outstanding Debt Principal (as of Jan. 1, 2024)	Allocation to Wastewater FCCs (%)	Allocation to Wastewater FCCs ($)
Refunding Revenue Bonds, Series 2014A	$4,990,000	44.8%	$2,237,516
Refunding Revenue Bonds, Series 2016A	$3,825,000	32.4%	$1,239,300
Revenue Certificates of Participation, Series 2016B	$36,765,000	0.0%	$0
Refunding Revenue Bonds, Series 2016C	$25,240,000	39.1%	$9,856,220
Revenue Certificates of Participation, Series 2020A	$61,080,000	0.0%	$0
Refunding Revenue Bonds, Series 2020B	$3,430,000	0.0%	$0
Refunding Revenue Bonds, Series 2020C	$111,670,000	32.4%	$36,181,080
Refunding Revenue Bonds, Series 2020D	$76,825,000	39.4%	$30,299,780
Refunding Revenue Bonds, Series 2022A	$67,390,000	32.4%	$21,834,360
Total	**$391,215,000**	**26.0%**	**$101,648,256**

BUY-IN UNITS OF SERVICE

Buy-in units of service are based on the number of current EDUs connected to the District's wastewater system. District staff provided the existing number of wastewater connections by water meter size and customer class as of 2024 (see Table 4-5). Consistent with the District's existing Wastewater FCCs, water meter capacity was utilized as a proxy for wastewater flow capacity. WRE calculated the number of EDUs by multiplying the number of meters at each meter size/type by the associated meter capacity ratio. The meter capacity ratios utilized were consistent with the District's 2023 Cost of Service Study (used to establish currently adopted bi-monthly rates and charges) and are based on AWWA-rated safe operating capacities in gpm by meter size and type.

Table 4-5: Existing Wastewater EDUs

Meter Size/Type	Safe Operating Capacity (gpm)	Meter Capacity Ratio	Existing Number of Meters	Existing Number of EDUs
5/8-inch	20	1.0	1,075	1,075
3/4-inch	30	1.0	21,210	21,210
1-inch	50	1.7	2,509	4,182
1.5-inch	100	3.3	137	457
1.5-inch Turbine	120	4.0	44	176
2-inch	160	5.3	169	901
2-inch Turbine	160	5.3	64	341
3-inch	320	10.7	7	75
3-inch Turbine	350	11.7	11	128
4-inch	500	16.7	4	67
4-inch Turbine	630	21.0	2	42
6-inch	1,000	33.3	2	67
6-inch Turbine	1,400	46.7	0	0
8-inch Turbine	2,400	80.0	0	0
10-inch Turbine	3,800	126.7	0	0
12-inch Turbine	5,000	166.7	0	0
14-inch Turbine	6,000	200.0	0	0
Total			**25,234**	**28,720**

BUY-IN COMPONENT CALCULATION

The Wastewater Buy-in component per EDU (see Table 4-6) was calculated by dividing the individual components of the cost basis (per Table 4-2, Table 4-3, and Table 4-4) by the existing number of wastewater EDUS (per Table 4-5).

Table 4-6: Wastewater Buy-in Calculation

Buy-In Component	Cost Basis	Existing EDUs	Buy-in (per EDU)
Capital Asset Value (RCLD)	$308,977,690	28,720	$10,758
Cash Reserves	$15,697,874	28,720	$547
Less Outstanding Debt Principal	($101,648,256)	28,720	($3,539)
Total	**$223,027,308**		**$7,765**

4.4 WASTEWATER INCREMENTAL COST COMPONENT

INCREMENTAL COST CALCULATION OVERVIEW

The development of the Incremental Cost component for the proposed Wastewater FCC consists of three primary steps:

1. **Determine the Incremental Cost Basis**: The Incremental cost basis reflects future capital spending required to expand system capacity to accommodate new users. It is based on the projected cost of growth-related CIP projects and any associated debt financing costs.
2. **Determine the Incremental Cost Units of Service**: The units of service for the Wastewater FCC Incremental Cost component are based on number of EDUs accommodated by expanded system capacity.
3. **Calculate the Incremental Cost component per EDU**: The total Incremental cost basis is divided by the total units of service to calculate the Incremental Cost component on a per EDU basis.

INCREMENTAL COST BASIS

CIP Project Costs

District staff identified select wastewater CIP projects from the District's currently adopted five-year CIP and 2020 Wastewater Hydraulic Model Update to include in the Incremental cost basis. District staff only selected CIP projects that are needed to accommodate new wastewater users and that can reasonably be constructed within the next ten years (see Table 4-7). Selected projects include substantial construction of and/or upgrades to the El Dorado Hills Trunk sewer line, Strolling Hills Trunk sewer line, Cameron Park Drive Trunk sewer line, and the Motherlode Force Main. All selected CIP projects were deemed by District staff as 100% growth-related and were therefore fully allocated to the Wastewater FCC Incremental cost basis.

Debt Financing Costs

It is currently uncertain whether any of the selected Wastewater CIP projects will be funded wholly or partly by new debt. Therefore, no additional debt financing costs were added to the Incremental cost basis.

Table 4-7: Selected Wastewater Incremental CIP Projects

Line	Selected Wastewater Incremental CIP Projects	Project Cost	Allocation to Wastewater FCCs (%)	Allocation to Wastewater FCCs ($)
1	Wastewater Collection System Hydraulic Modeling	$250,000	100.0%	$250,000
2	El Dorado Hills Trunk – New Relief Lift Station & Force Main (Option 3: Latrobe Road)	$9,029,132	100.0%	$9,029,132
3	Promontory Village #2 Lift Station Pump Upgrade	$1,862,406	100.0%	$1,862,406
4	Promontory Village #3 LS Upstream Gravity – Upsize to 8”	$353,621	100.0%	$353,621
5	Promontory Village Trunk Section 1 – Upsize to 15”	$872,266	100.0%	$872,266
6	Promontory Village Trunk Section 2 – Upsize to 18”	$1,261,250	100.0%	$1,261,250
7	Promontory Village #1 Lift Station Pump Upgrade	$2,274,964	100.0%	$2,274,964
8	Silva Valley Parkway Trunk – 21” Relief Line	$1,296,612	100.0%	$1,296,612
9	Strolling Hills Trunk	$5,798,012	100.0%	$5,798,012
10	Motherlode Force Main Section 1	$2,285,954	100.0%	$2,285,954
11	Cameron Park Drive Trunk	$6,057,779	100.0%	$6,057,779
12	El Dorado Lift Station Pump Replacement	$1,620,950	100.0%	$1,620,950
13	Debs Frosty Lift Station Upgrade	$1,246,884	100.0%	$1,246,884
14	Motherlode Force Main	$5,000,000	100.0%	$5,000,000
15	**Total**	**$39,209,831**		**$39,209,831**

INCREMENTAL UNITS OF SERVICE

The Incremental units of service represent future wastewater EDUs served by planned wastewater system expansion. The number of future wastewater EDUs served was estimated based on new potable water EDU projections through 2045 (per Section 3.4) District staff estimated that 95% of future potable water connections through 2045 will require wastewater services from the District. Therefore, the number of future potable water EDUs through 2045 was multiplied by 95% to estimate the number of future wastewater EDUs through 2045 served by planned wastewater system expansion.

Table 4-8: Future Wastewater EDUs Served

Line	Future Wastewater EDUs Served by Incremental CIP	Value
1	Future Potable Water EDUs through 2045[32]	6,847
2	Future Potable Water Connections Requiring Wastewater Service	95%
3	Future Wastewater EDUs Served[33]	6,504

[32] Per Table 3-10, Line 19; assumes an annual growth rate of 0.62% (consistent with El Dorado County’s recent Traffic Impact Fee Study).
[33] =[Line 1] × [Line 2]

INCREMENTAL COMPONENT CALCULATION

The Wastewater Incremental Cost component per EDU (see Table 4-9) was calculated by dividing the Incremental cost basis (per Table 4-7) by the number of future EDUS served (per Table 4-8).

Table 4-9: Wastewater Incremental Cost Calculation

Description	Value
Incremental CIP Allocation to FCCs	$39,209,831
Future EDUs Served	6,504
Incremental Cost Component (per EDU)	**$6,028**

4.5 PROPOSED WASTEWATER FCCS

PROPOSED WASTEWATER FCC CALCULATION

The proposed Wastewater FCC per EDU (see Table 4-10) was calculated by summing the Buy-in component (per Table 4-6) and Incremental Cost component (per Table 4-9). The proposed Wastewater FCCs were developed using 2024 as a base year. Therefore, the District may apply annual CCI adjustments to the proposed FCCs beginning January 1, 2025, and each year thereafter.

The proposed Wastewater FCC per EDU is about $4,100 less than the current FCC (see Table 4-11). The primary reason for the reduction is because the Incremental Cost component has decreased significantly relative to the 2013 FCC Update Study. The prior study's Incremental CIP component included significant wastewater treatment plant expansions that were expected to be necessary between 2020-2030 to accommodate new growth. Actual growth in recent years was less than projected, and wastewater treatment plant expansions are now likely not needed within the next ten years. The proposed Wastewater FCCs have decreased in large part due to the exclusion of these substantial CIP projects that were included in the 2013 FCC Update Study and the continued depreciation of wastewater system assets.

Table 4-10: Proposed Wastewater FCC Calculation (per EDU)

FCC Component	Proposed FCC (per EDU)
Buy-In	$7,765
Incremental Cost	$6,028
Total	**$13,794**

Table 4-11: Comparison of Current and Proposed Wastewater FCCs (per EDU)

Comparison to Current Wastewater FCCs	
Proposed FCC (per EDU)	$13,794
Current FCC (per EDU)	$17,934
Difference ($)	*($4,140)*

PROPOSED WASTEWATER FCCS BY METER SIZE/TYPE

Proposed Wastewater FCCs by meter size and type (see Table 4-12) were calculated by multiplying each FCC component per EDU (per Table 4-10) by the associated EDU equivalency (per Table 4-5). This approach ensures that new wastewater customers are charged in proportion to capacity. Note that the proposed EDU equivalencies for 1-inch and 6-inch Turbine meters are different from the current FCC schedule, as they are based on precise rather than rounded AWWA-rated meter capacity ratios.[34] Proposed FCCs were only developed for meter sizes and types that District staff will install in the future, which may differ from the size and type of some existing meters. Because the existing Wastewater FCC schedule includes FCCs for non-Turbine type meters only for certain meter sizes, a direct comparison of proposed versus current FCCs is not available for all meter sizes and types (see Table 4-13).

Table 4-12: Proposed Wastewater FCCs

Meter Size/Type	EDU Equivalency	Buy-In	Incremental Cost	Proposed FCC
3/4-inch	1.0	$7,765	$6,028	**$13,794**
SFR 1-inch	1.0	$7,765	$6,028	**$13,794**
1-inch	1.7	$12,942	$10,047	**$22,990**
1.5-inch Turbine	4.0	$31,062	$24,113	**$55,175**
2-inch Turbine	5.3	$41,416	$32,151	**$73,566**
3-inch Turbine	11.7	$90,597	$70,329	**$160,927**
4-inch Turbine	21.0	$163,075	$126,593	**$289,668**
6-inch Turbine	46.7	$362,389	$281,317	**$643,706**
8-inch Turbine	80.0	$621,239	$482,258	**$1,103,497**

Table 4-13: Comparison of Current and Proposed Wastewater FCCs

Meter Size/Type	Proposed FCC	Current FCC	Difference ($)
3/4-inch	**$13,794**	$17,934	*($4,140)*
SFR 1-inch	**$13,794**	$17,934	*($4,140)*
1-inch	**$22,990**	$35,868	*($12,878)*
1.5-inch Turbine	**$55,175**	$71,736	*($16,561)*
2-inch Turbine	**$73,566**	N/A	*N/A*
3-inch Turbine	**$160,927**	N/A	*N/A*
4-inch Turbine	**$289,668**	N/A	*N/A*
6-inch Turbine	**$643,706**	$842,898	*($199,192)*
8-inch Turbine	**$1,103,497**	N/A	*N/A*

[34] The proposed EDU equivalency is 1.7 rather than 2 for 1-inch meters and 46.7 rather than 47 for 6-inch Turbine meters.

5. RECYCLED WATER FCC UPDATE

5.1 CURRENT RECYCLED WATER FCCS

The District's current Recycled Water FCCs effective January 1, 2024 (see Table 5-1) are directly based on adopted FCCs developed during the 2013 FCC Update Study. Since 2013, Recycled Water FCCs have been adjusted annually in proportion to changes in the CCI. Current Recycled Water FCCs are differentiated by water meter size based on meter capacity ratios and are based on the Hybrid Method. However, the "Fixed Assets plus Future Capital Projects" component shown below essentially combines the Buy-in and Incremental Cost into a single component, which comprises the total Recycled Water FCC.

Table 5-1: Current Recycled Water FCCs (effective Jan. 1, 2024)

Meter Size/ Type	EDUs	Fixed Assets plus Future Capital Projects	Total Recycled Water FCC
3/4-inch	1	$4,246	**$4,246**
1-inch	2	$8,492	**$8,492**
1.5-inch	3	$12,738	**$12,738**
1.5-inch Turbine	4	$16,984	**$16,984**
2-inch	5	$21,230	**$21,230**
3-inch	12	$50,952	**$50,952**
4-inch	21	$89,166	**$89,166**
6-inch	43	$182,578	**$182,578**
6-inch Turbine	47	$199,562	**$199,562**

5.2 PROPOSED RECYCLED WATER FCC METHODOLOGY

PROPOSED METHODOLOGY

WRE worked closely with District staff to evaluate and develop the proposed methodology used to calculate Recycled Water FCCs in this study. The 2013 FCC Update Study utilized the Hybrid Method to establish currently adopted Recycled Water FCCs. However, there is no longer any significant expansion-related CIP planned for the District's recycled water system. Therefore, an Incremental Cost component is no longer justifiable. WRE recommends eliminating the Incremental Cost component and establishing proposed Recycled Water FCCs based on the Buy-in Method only. This represents a change in the Recycled Water FCC methodology from the Hybrid Method to the Buy-in Method.

OTHER NOTABLE CHANGES FROM 2013 FCC UPDATE METHODOLOGY

The proposed Recycled Water FCC methodology is mostly consistent with the approach utilized in the 2013 FCC Update Study to develop the Buy-in component of the current Recycled Water FCC.

However, the following methodological refinements were identified and incorporated into the proposed Recycled Water FCC calculations. Note that the first refinement to the Recycled Water FCC methodology is consistent with proposed changes to the Potable Water FCC and Wastewater FCC methodologies.

1. **Revised Buy-in units of service**: Buy-in units of service in the 2013 FCC Update Study were set equal to total existing plus future EDUs. To more closely align with the "Equity Buy-in" approach, WRE recommends that Buy-in units of service include existing EDUs only. This proposed change is more consistent with industry standards and best practices.
2. **Inclusion of Buy-in adjustments**: The 2013 FCC Update Study did not include any adjustments to the Buy-in system valuation to account for existing cash reserves, outstanding debt principal, etc. WRE recommends that adjustments be incorporated for existing cash reserves and outstanding debt principal to align with industry standards and maintain consistency with the proposed Potable Water and Wastewater Buy-in methodology.
3. **Exclusion of Smaller Transmission and Distribution Lines**: The 2013 FCC Update Study did not exclude any recycled water transmission and distribution assets from the Buy-in cost basis. Similar to the potable water system however, recycled water transmission and distribution assets include smaller distribution waterlines of six-inch diameter or less that are in-kind contributions by the initial development and generally do not contribute to available system capacity for new connections. WRE therefore recommends excluding a portion of recycled water system transmission and distribution assets from the Recycled Water Buy-in cost basis based on the proportion of recycled water lines that are 6-inches or smaller.

5.3 RECYCLED WATER BUY-IN COMPONENT

BUY-IN CALCULATION OVERVIEW

The development of the Buy-in component for the proposed Recycled Water FCCs consists of three primary steps:

1. **Determine the Buy-in Cost Basis**: The Buy-in cost basis represents the value of the existing system that the new user is buying into. It is based primarily on the value of recycled water system capital assets, but also includes adjustments for cash reserves and outstanding debt principal payments.
2. **Determine the Buy-in Units of Service**: The units of service for the Recycled Water FCC Buy-in are based on the number of EDUs currently connected to the recycled water system. The number of EDUs is determined by utilizing meter capacity ratios to convert larger water meter sizes into ¾-inch meter equivalencies.
3. **Calculate the Buy-in component per EDU**: The total Buy-in cost basis is divided by the total units of service to calculate the Buy-in component on a per EDU basis.

BUY-IN COST BASIS

Capital Asset Value

The same asset valuation approach (RCLD) that was used to quantify potable water and wastewater capital assets was applied to develop the Recycled Water FCC Buy-in cost basis (refer to Section 3.3 for details). WRE worked with District staff to determine which District assets were allocable to Recycled Water FCCs (see Table 5-2).

All "Recycled Water Operations" assets were fully allocated to the Recycled Water FCC Buy-in cost basis, with the exception of reclaimed transmission and distribution assets (see Table 5-2, Line 38). As previously outlined in Section 5.2, smaller existing recycled waterlines are typically contributed by developers and do not benefit future users. It is therefore appropriate to exclude these smaller distribution waterlines from the Recycled Water FCC Buy-in cost basis. Because about 45% of recycled waterlines (based on length) are larger than 6-inches, the same proportion of transmission and distribution asset value was included in the Buy-in cost basis (see Table 5-3 for supporting details).

All "Water Operations" assets, "Hydro Operations" assets, and "Wastewater Operations" assets were excluded, as they pertain solely to either potable water or wastewater services. "General District Operations" assets pertain to administrative and overhead functions that benefit all service types and were therefore proportionally allocated 1.6% to recycled water services. "Recreation" assets were excluded as they do not provide specific benefits to recycled services.

Table 5-2: Capital Asset Allocation to Recycled Water Service

Line	Capital Asset Classification	Capital Asset Value (RCLD)	Allocation to Recycled Water FCCs (%)	Allocation to Recycled Water FCCs ($)
1	**Water Operations**			
2	LAND & EASEMENTS	$10,856,481	0.0%	$0
3	WATER RIGHTS	$7,878,194	0.0%	$0
4	SOURCE OF SUPPLY	$54,842,440	0.0%	$0
5	OFFICE FURNITURE & EQUIPMENT	$206,923	0.0%	$0
6	OFFICE BUILDINGS & IMPROVEMENTS	$91,569	0.0%	$0
7	LAND IMPROVEMENTS	$403,899	0.0%	$0
8	TREATMENT PLANT	$7,831,401	0.0%	$0
9	WATER FACILITIES	$10,435,139	0.0%	$0
10	INFRASTRUCTURE IMPROVEMENTS	$5,949,974	0.0%	$0
11	PUMPING PLANT	$4,154,294	0.0%	$0
12	TRANSMISSION/DISTRIBUTION	$438,157,531	0.0%	$0
13	VEHICLES	$3,104,587	0.0%	$0
14	EQUIPMENT & TOOLS	$2,972,487	0.0%	$0
15	IMPROVEMENTS SHORT LIFE 5 YRS	$34,651	0.0%	$0

Line	Capital Asset Classification	Capital Asset Value (RCLD)	Allocation to Recycled Water FCCs (%)	Allocation to Recycled Water FCCs ($)
16	IMPROVEMENTS SHORT LIFE 10 YRS	$1,078,401	0.0%	$0
17	**Subtotal**	**$547,997,971**	**0.0%**	**$0**
18				
19	**Hydro Operations**			
20	LAND & EASEMENTS	$3,513,323	0.0%	$0
21	DAMS & RESERVOIRS	$42,626,809	0.0%	$0
22	SOURCE OF SUPPLY	$5,890,245	0.0%	$0
23	OFFICE FURNITURE & EQUIPMENT	$0	0.0%	$0
24	OFFICE BUILDINGS & IMPROVEMENTS	$1,357,795	0.0%	$0
25	LAND IMPROVEMENTS	$251,728	0.0%	$0
26	TRANSMISSION/DISTRIBUTION	$39,183,864	0.0%	$0
27	HYDRO PLANT	$2,581,360	0.0%	$0
28	VEHICLES	$547,900	0.0%	$0
29	EQUIPMENT & TOOLS	$379,131	0.0%	$0
30	IMPROVEMENTS SHORT LIFE 5 YRS	$0	0.0%	$0
31	IMPROVEMENTS SHORT LIFE 10 YRS	$383,044	0.0%	$0
32	LARGE CONSTRUCTION PROJECT 100 YEARS	$65,125,556	0.0%	$0
33	**Subtotal**	**$161,840,755**	**0.0%**	**$0**
34				
35	**Recycled Water Operations**			
36	TREATMENT PLANT	$3,780,207	100.0%	$3,780,207
37	EQUIPMENT & TOOLS	$143,366	100.0%	$143,366
38	RECLAIMED WATER TRANSMISSION & DISTRIBUTION	$31,971,909	45.2%	$14,459,444
39	IMPROVEMENTS SHORT LIFE 10 YRS	$7,016	100.0%	$7,016
40	**Subtotal**	**$35,902,497**	**51.2%**	**$18,390,032**
41				
42	**Wastewater Operations**			
43	LAND & EASEMENTS	$1,592,853	0.0%	$0
44	DISPOSAL - LEACH FIELDS/SEPTIC	$1,418,011	0.0%	$0
45	OFFICE FURNITURE & EQUIPMENT	$132,830	0.0%	$0
46	OFFICE BUILDINGS & IMPROVEMENTS	$3,355,975	0.0%	$0
47	TREATMENT PLANT	$57,153,728	0.0%	$0
48	INFRASTRUCTURE IMPROVEMENTS	$1,492,658	0.0%	$0
49	TRANSMISSION/DISTRIBUTION	$235,183,926	0.0%	$0
50	COLLECTION SYSTEM-WW	$59,188,262	0.0%	$0
51	VEHICLES	$534,736	0.0%	$0
52	EQUIPMENT & TOOLS	$1,896,262	0.0%	$0

Line	Capital Asset Classification	Capital Asset Value (RCLD)	Allocation to Recycled Water FCCs (%)	Allocation to Recycled Water FCCs ($)
53	IMPROVEMENTS SHORT LIFE 5 YRS	$0	0.0%	$0
54	IMPROVEMENTS SHORT LIFE 10 YRS	$940,788	0.0%	$0
55	**Subtotal**	**$362,890,031**	**0.0%**	**$0**
56				
57	**General District Operations**			
58	LAND & EASEMENTS	$1,179,913	1.6%	$19,455
59	OFFICE FURNITURE & EQUIPMENT	$0	1.6%	$0
60	OFFICE BUILDINGS & IMPROVEMENTS	$17,750,915	1.6%	$292,681
61	VEHICLES	$287,413	1.6%	$4,739
62	EQUIPMENT & TOOLS	$153,089	1.6%	$2,524
63	IMPROVEMENTS SHORT LIFE 5 YRS	$0	1.6%	$0
64	IMPROVEMENTS SHORT LIFE 10 YRS	$4,505	1.6%	$74
65	**Subtotal**	**$19,375,836**	**1.6%**	**$319,473**
66				
67	**Recreation**			
68	LAND & EASEMENTS	$110,376	0.0%	$0
69	DAMS & RESERVOIRS	$1,169,202	0.0%	$0
70	OFFICE FURNITURE & EQUIPMENT	$0	0.0%	$0
71	OFFICE BUILDINGS & IMPROVEMENTS	$2,728,341	0.0%	$0
72	LAND IMPROVEMENTS	$44,382	0.0%	$0
73	TREATMENT PLANT	$83,668	0.0%	$0
74	TRANSMISSION/DISTRIBUTION	$2,497,925	0.0%	$0
75	VEHICLES	$30,270	0.0%	$0
76	EQUIPMENT & TOOLS	$30,847	0.0%	$0
77	IMPROVEMENTS SHORT LIFE 5 YRS	$0	0.0%	$0
78	IMPROVEMENTS SHORT LIFE 10 YRS	$19,298	0.0%	$0
79	**Subtotal**	**$6,714,309**	**0.0%**	**$0**
80				
81	**TOTAL**	**$1,134,721,399**	**1.6%**	**$18,709,505**

Table 5-3: Basis for Recycled Water Transmission & Distribution Asset Exclusions

Description	Length (feet)	Length (%)
Recycled Water Lines (6-inch diameter or smaller)	279,760	54.8%
Recycled Water Lines (larger than 6-inch diameter)	230,989	45.2%
Total	**510,749**	**100.0%**

Cash Reserves

Current cash reserves held by the District were built up in part through rates and charges collected from past and current recycled water users. Therefore, it is appropriate to include the value of cash reserves when quantifying the existing value of the recycled system. District staff provided WRE with the District's cash reserve levels as of January 1, 2024 (see Table 5-4). "Water Direct" cash reserves pertain to potable water services only and were therefore excluded. "Wastewater Direct" cash reserves pertain to both wastewater and recycled water operations and were therefore allocated between the Wastewater FCC Buy-in cost basis and Recycled Water FCC Buy-in cost basis in proportion to capital asset values attributed to each service.[35]

Outstanding Debt Principal

None of the District's outstanding debt was used to finance recycled water system capital projects. Therefore, no portion of the District's outstanding debt principal as of January 1, 2024 was allocated to the Recycled Water FCC Buy-in cost basis (see Table 5-5).

Table 5-4: Cash Reserves Allocation to Recycled Water Service

Cash Reserves	Cash Reserves (as of Jan. 1, 2024)	Allocation to Recycled Water FCCs (%)	Allocation to Recycled Water FCCs ($)
Water Direct			
Operating Reserves	$10,501,829	0.0%	$0
Capital Replacement	$11,854,847	0.0%	$0
Routine Capital Replacement	$2,169,971	0.0%	$0
Self Insurance	$600,000	0.0%	$0
Subtotal	**$25,126,646**	**0.0%**	**$0**
Wastewater Direct			
Operating Reserves	$5,773,051	5.7%	$329,616
Capital Replacement	$9,225,224	5.7%	$526,720
Routine Capital Replacement	$1,250,152	5.7%	$71,378
Self Insurance	$400,000	5.7%	$22,838
Subtotal	**$16,648,427**	**5.7%**	**$950,552**
Total	**$41,775,073**	**2.3%**	**$950,552**

[35] Capital assets attributable to Recycled FCCs ($18.7 million per Table 5-2) comprise 5.7% of capital assets attributable to either Wastewater FCCs or Recycled Water FCCs ($327.7 million per Table 4-2 and Table 5-2). Therefore, 5.7% of "Wastewater Direct" reserves were allocated to Recycled Water FCCs.

Table 5-5: Outstanding Debt Principal Allocation to Recycled Water Service

Debt Issuance	Outstanding Debt Principal (as of Jan. 1, 2024)	Allocation to Recycled Water FCCs (%)	Allocation to Recycled Water FCCs ($)
Refunding Revenue Bonds, Series 2014A	$4,990,000	0.0%	$0
Refunding Revenue Bonds, Series 2016A	$3,825,000	0.0%	$0
Revenue Certificates of Participation, Series 2016B	$36,765,000	0.0%	$0
Refunding Revenue Bonds, Series 2016C	$25,240,000	0.0%	$0
Revenue Certificates of Participation, Series 2020A	$61,080,000	0.0%	$0
Refunding Revenue Bonds, Series 2020B	$3,430,000	0.0%	$0
Refunding Revenue Bonds, Series 2020C	$111,670,000	0.0%	$0
Refunding Revenue Bonds, Series 2020D	$76,825,000	0.0%	$0
Refunding Revenue Bonds, Series 2022A	$67,390,000	0.0%	$0
Total	**$391,215,000**	**0.0%**	**$0**

BUY-IN UNITS OF SERVICE

Buy-in units of service are based on the number of current EDUs connected to the District's recycled water system. District staff provided the existing number of recycled water connections by water meter size and customer class as of 2024 (see Table 5-6). WRE calculated the number of EDUs by multiplying the number of meters at each meter size/type by the associated meter capacity ratio. Meter capacity ratios represent the safe operating capacity of each meter size/type relative to a ¾-inch meter, as larger meters have capacities. The meter capacity ratios utilized were consistent with the District's 2023 Cost of Service Study (used to establish currently adopted bi-monthly rates and charges) and are based on AWWA-rated safe operating capacities in gpm by meter size and type.

Table 5-6: Existing Recycled Water EDUs

Meter Size/ Type	Safe Operating Capacity (gpm)	Meter Capacity Ratio	Existing Number of Meters	Existing Number of EDUs
5/8-inch	20	1.0	0	0
3/4-inch	30	1.0	5,526	5,526
1-inch	50	1.7	37	62
1.5-inch	100	3.3	35	117
1.5-inch Turbine	120	4.0	29	116
2-inch	160	5.3	15	80
2-inch Turbine	160	5.3	41	219
3-inch	320	10.7	0	0
3-inch Turbine	350	11.7	2	23
4-inch	500	16.7	0	0
4-inch Turbine	630	21.0	2	42
6-inch	1,000	33.3	0	0
6-inch Turbine	1,400	46.7	1	47
8-inch Turbine	2,400	80.0	1	80
10-inch Turbine	3,800	126.7	0	0
12-inch Turbine	5,000	166.7	0	0
14-inch Turbine	6,000	200.0	0	0
Total			**5,689**	**6,311**

BUY-IN COMPONENT CALCULATION

The Recycled Water Buy-in component per EDU (see Table 5-7) was calculated by dividing the individual components of the cost basis (per Table 5-2, Table 5-4, and Table 5-5) by the existing number of recycled water system EDUs (per Table 5-6).

Table 5-7: Recycled Water Buy-in Calculation

Buy-In Component	Cost Basis	Existing EDUs	Buy-in (per EDU)
Capital Asset Value (RCLD)	$18,709,505	6,311	$2,965
Cash Reserves	$950,552	6,311	$151
Less Outstanding Debt Principal	$0	6,311	$0
Total	**$19,660,057**		**$3,115**

5.4 PROPOSED RECYCLED WATER FCCS

PROPOSED RECYCLED WATER FCC CALCULATION

The proposed Recycled Water FCC per EDU (see Table 5-8) is simply equal to the proposed Buy-in component per EDU (per Table 5-7). As the proposed methodology consists of a Buy-in component

only, an Incremental Cost component is no longer applicable. The proposed Recycled Water FCCs were developed using 2024 as a base year. Therefore, the District may apply annual CCI adjustments to the proposed FCCs beginning January 1, 2025, and each year thereafter.

The proposed Recycled Water FCC per EDU is about $1,100 less than the current FCC (see Table 5-9). The main reasons for the decrease are the elimination of an Incremental Cost component, the exclusion of transmission and distribution assets of 6-inches and smaller, and the continued depreciation of recycled water system assets.

Table 5-8: Proposed Recycled Water FCC Calculation (per EDU)

FCC Component	Proposed FCC (per EDU)
Buy-In	$3,115
Incremental Cost	N/A
Total	**$3,115**

Table 5-9: Comparison of Current and Proposed Recycled Water FCCs (per EDU)

Comparison to Current Recycled Water FCCs	
Proposed FCC (per EDU)	$3,115
Current FCC (per EDU)	$4,246
Difference ($)	*($1,131)*

PROPOSED RECYCLED WATER FCCS BY METER SIZE/TYPE

Proposed Recycled Water FCCs by meter size and type (see Table 5-10) were calculated by multiplying the Buy-in component per EDU (per Table 5-8) by the associated EDU equivalency (per Table 5-6). This approach ensures that new recycled water users are charged in proportion to capacity. Note that the proposed EDU equivalencies for 1-inch and 6-inch Turbine meters are different from the current FCC schedule, as they are based on precise rather than rounded AWWA-rated meter capacity ratios.[36] Proposed FCCs were only developed for meter sizes and types that District staff will install in the future, which may differ from the size and type of some existing meters. Because the existing Recycled Water FCC schedule includes FCCs for non-Turbine type meters only for certain meter sizes, a direct comparison of proposed versus current FCCs is not available for all meter sizes and types (see Table 5-11).

[36] The proposed EDU equivalency is 1.7 rather than 2 for 1-inch meters and 46.7 rather than 47 for 6-inch Turbine meters.

Table 5-10: Proposed Recycled Water FCCs

Meter Size/Type	EDU Equivalency	Buy-In	Proposed FCC
3/4-inch	1.0	$3,115	**$3,115**
1-inch	1.7	$5,192	**$5,192**
1.5-inch Turbine	4.0	$12,461	**$12,461**
2-inch Turbine	5.3	$16,614	**$16,614**
3-inch Turbine	11.7	$36,344	**$36,344**
4-inch Turbine	21.0	$65,419	**$65,419**
6-inch Turbine	46.7	$145,376	**$145,376**
8-inch Turbine	80.0	$249,216	**$249,216**

Table 5-11: Comparison of Current and Proposed Recycled Water FCCs

Meter Size/Type	Proposed FCC	Current FCC	Difference ($)
3/4-inch	**$3,115**	$4,246	*($1,131)*
1-inch	**$5,192**	$8,492	*$0*
1.5-inch Turbine	**$12,461**	$16,984	*$0*
2-inch Turbine	**$16,614**	N/A	*N/A*
3-inch Turbine	**$36,344**	N/A	*N/A*
4-inch Turbine	**$65,419**	N/A	*N/A*
6-inch Turbine	**$145,376**	$199,562	*$0*
8-inch Turbine	**$249,216**	N/A	*N/A*

6. AGRICULTURAL METERED IRRIGATION (AMI) FCC UPDATE

6.1 CURRENT AMI FCCS

AMI refers to metered potable water connections used for agricultural irrigation purposes that meet the specific criteria outlined in the District's Administrative Regulation (AR) 9024. Overall, very few new AMI customers are expected to connect to the District's potable water system in the near term. The basis for the District's current AMI FCCs effective January 1, 2024 (see Table 5-1) was not evaluated during the 2013 FCC Update Study or prior capacity charge nexus study in 2008. Like the District's FCCs for other services, currently adopted AMI FCCs are differentiated by water meter size based on meter capacity ratios. The current AMI FCCs consist of a 'Buy-in" component in addition to the two supplemental charges applicable to Potable Water FCCs.

Table 6-1: Current AMI FCCs (effective Jan. 1, 2024)

Meter Size/ Type	EDUs	Water Buy-in	Gabbro Soils	Line & Cover 3	Total AMI FCC
3/4-inch	1	$453	$345	$325	**$1,123**
1-inch	2	$906	$690	$325	**$1,921**
1.5-inch	3	$1,359	$1,035	$325	**$2,719**
1.5-inch Turbine	4	$1,812	$1,380	$325	**$3,517**
2-inch	5	$2,265	$1,725	$325	**$4,315**
3-inch	12	$5,436	$4,140	$325	**$9,901**
4-inch	21	$9,513	$7,245	$325	**$17,083**
6-inch	43	$19,479	$14,835	$325	**$34,639**
6-inch Turbine	47	$21,291	$16,215	$325	**$37,831**

6.2 PROPOSED AMI FCC METHODOLOGY

PROPOSED METHODOLOGY

AMI is essentially a special subset of potable water service. The primary distinction from other potable water users is that AMI customers use water for agricultural irrigation purposes and therefore do not require water to be treated to potable drinking water standards. Non-potable water, if available, would be sufficient for AMI purposes and many AMI customers, most of whom are located east of Cameron Park, were previously served with non-potable water via antiquated ditches. Due to water loss and high cost of maintenance, the District has abandoned most of its ditches and serves AMI customers with potable water via the District's piped conveyance and distribution system. Costs associated with treatment to potable standards therefore do not directly benefit AMI customers.

Additionally, significant portions of the potable water system located in the El Dorado Hills/Cameron Park areas of the District's service area do not directly benefit AMI customers. Due to these differences from other potable water customers, WRE recommends that proposed AMI FCCs be established by applying adjustment factors to each component of the proposed Potable Water FCCs

(from Section 3). Due to the absence of documentation of the existing AMI FCC calculations, it is challenging to compare the proposed methodology to the prior methodology underlying the currently adopted AMI FCCs.

6.3 ATTRIBUTION OF POTABLE WATER FCC COMPONENTS TO AMI FCCS

The proposed AMI FCC per EDU is a direct function of the proposed Potable Water FCC components (see Table 6-2). Each Potable Water FCC component (per Table 3-7, Table 3-11, and Table 3-12) was multiplied by an AMI factor based on how attributable each component is to AMI service. The Potable Water Buy-in component was multiplied by an AMI factor of 41.2% based on a detailed analysis conducted by District staff during the 2023 Cost of Service Study. This analysis identified and isolated potable water system capital assets that benefit AMI customers. Based on this analysis, WRE estimated that AMI services require about 41.2% of system assets that regular potable water customers require, on an acre-foot delivery basis.

The Potable Water Incremental Cost component was applied to AMI FCCs based on whether each CIP project benefits AMI services. District staff indicated that within approximately the next ten years, the only CIP project attributable to AMI service was PW-P-02. All other CIP projects were therefore excluded from the proposed AMI FCCs, including all EDHWTP upgrades. Supplemental charges were both fully applied to proposed AMI FCCs, which is consistent with current AMI FCCs.

Table 6-2: Attribution of Potable Water FCC Components to Proposed AMI FCCs

AMI FCC Calculation	Proposed Potable Water FCC (per EDU)	AMI Factor (%)	Proposed AMI FCC (per EDU)
Buy-in Component			
Capital Asset Value (RCLD)	$10,988	41.2%	$4,525
Cash Reserves	$509	41.2%	$209
Less Outstanding Debt Principal	($5,862)	41.2%	($2,414)
Subtotal	**$5,635**		**$2,321**
Incremental Cost Component			
EDHWTP Priority 1 Project Costs (including Financing Costs)	$11,511	0.0%	$0
EDHWTP Priority 2 Project Costs	$504	0.0%	$0
PW-P-01: Water main upsize between EDH WTP High Lift PS and Oak Ridge Tanks	$5,697	0.0%	$0
PW-PS-01: Oak Ridge Pump Station No. 2	$2,366	0.0%	$0
PW-P-02: Water main upsize along existing POM from Res C to Res 7	$7,426	100.0%	$7,426
Subtotal	**$27,504**		**$7,426**
Supplemental Charges			
Current Gabbro Soils Supplemental Charge (per EDU)	$345	100.0%	$345
Current Line & Cover 3 Supplemental Charge (per EDU)	$325	100.0%	$325
Subtotal	**$670**		**$670**
Total	**$33,809**		**$10,416**

6.4 PROPOSED AMI FCCS

PROPOSED AMI WATER FCC CALCULATION

The proposed AMI FCC per EDU (see Table 6-3) equals the sum of each adjusted Potable Water FCC component per EDU (per Table 6-2). The proposed AMI FCCs were developed using 2024 as a base year. Therefore, the District may apply annual CCI adjustments to the proposed FCCs beginning January 1, 2025, and each year thereafter.

The proposed AMI FCC per EDU is about $9,300 higher than the current FCC (see Table 6-4). This substantial increase is primarily because the District has not increased AMI FCCs annually at the same rate as Potable Water FCCs over the last four decades. As a result, current Potable Water FCCs and AMI FCCs have diverged significantly. The proposed AMI FCC per EDU is about 31% of the proposed Potable Water FCC per EDU.

Table 6-3: Proposed AMI Water FCC Calculation (per EDU)

FCC Component	Proposed FCC (per EDU)
Buy-In	$2,321
Incremental Cost	$7,426
Gabbro Soils Supplemental Charge	$345
Line & Cover 3 Supplemental Charge	$325
Total	**$10,416**

Table 6-4: Comparison of Current and Proposed AMI FCCs (per EDU)

Comparison to Current AMI Water FCCs	
Proposed FCC (per EDU)	$10,416
Current FCC (per EDU)	$1,123
Difference ($)	*$9,293*

PROPOSED AMI FCCS BY METER SIZE/TYPE

Proposed AMI FCCs by meter size and type (see Table 6-5) were calculated by multiplying each component per EDU (per Table 6-3) by the associated potable water EDU equivalency (per Table 3-6). This approach ensures that new AMI users are charged in proportion to capacity. Note that the proposed EDU equivalencies for 1-inch and 6-inch Turbine meters are different from the current FCC schedule, as they are based on precise rather than rounded AWWA-rated meter capacity ratios.[37] Proposed FCCs were only developed for meter sizes and types that District staff will install in the future, which may differ from the size and type of some existing meters. Because the existing AMI FCC schedule includes FCCs for non-Turbine type meters only for certain meter sizes, a direct comparison of proposed versus current FCCs is not available for all meter sizes and types (see Table 6-5).

Table 6-5: Proposed AMI FCCs

AMI FCCs	EDU Equivalency	Buy-In	Incremental Cost	Gabbro Soils	Line & Cover 3	Proposed FCC
3/4-inch	1.0	$2,321	$7,426	$345	$325	**$10,416**
1-inch	1.7	$3,868	$12,376	$575	$542	**$17,361**
1.5-inch Turbine	4.0	$9,283	$29,702	$1,380	$1,300	**$41,665**
2-inch Turbine	5.3	$12,377	$39,603	$1,840	$1,733	**$55,554**
3-inch Turbine	11.7	$27,075	$86,632	$4,025	$3,792	**$121,524**
4-inch Turbine	21.0	$48,736	$155,938	$7,245	$6,825	**$218,744**
6-inch Turbine	46.7	$108,302	$346,528	$16,100	$15,167	**$486,097**
8-inch Turbine	80.0	$185,660	$594,049	$27,600	$26,000	**$833,309**

[37] The proposed EDU equivalency is 1.7 rather than 2 for 1-inch meters and 46.7 rather than 47 for 6-inch Turbine meters.

Table 6-6: Comparison of Current and Proposed AMI FCCs

Meter Size/Type	Proposed FCC	Current FCC	Difference ($)
3/4-inch	**$10,416**	$1,123	*$9,293*
1-inch	**$17,361**	$1,921	*$15,440*
1.5-inch Turbine	**$41,665**	$3,517	*$38,148*
2-inch Turbine	**$55,554**	N/A	*N/A*
3-inch Turbine	**$121,524**	N/A	*N/A*
4-inch Turbine	**$218,744**	N/A	*N/A*
6-inch Turbine	**$486,097**	$37,831	*$448,266*
8-inch Turbine	**$833,309**	N/A	*N/A*

7. DUAL PLUMBED RESIDENTIAL FCC UPDATE

7.1 CURRENT DUAL PLUMBED RESIDENTIAL FCCS

The dual plumbed residential customer class includes SFR customers with both a potable water metered connection for indoor water needs and a recycled water metered connection for outdoor watering needs. Overall, very few new dual plumbed residential customers are expected to connect to the District's potable and recycled water systems in the near term. The District's current Dual Plumbed Residential FCCs effective January 1, 2024 (see Table 7-1) are directly based on adopted FCCs developed during the 2013 FCC Update Study. Since 2013, Dual Plumbed Residential FCCs have been adjusted annually in proportion to changes in the CCI.

Current Dual Plumbed Residential FCCs include a reduced Potable Water FCC per EDU in addition to a standard Recycled Water FCC per EDU. This is because dual plumbed residential customers only require potable water to meet indoor water needs, and therefore place less demand on potable water system capacity. A dual plumbed residential customer represents a single EDU. A reduction to the Potable Water FCC is necessary to ensure that a dual plumbed residential connection is not "double-charged" for capacity already provided for by the recycled water system. Without a reduced Potable Water FCC, dual plumbed residential customers would effectively be unjustifiably subjected to FCCs in excess of one EDU. Additionally, the Potable Water FCC reduction for dual plumbed residential customers helps incentivize use of the District's recycled water system and thus potable water conservation. All future dual plumbed residential customers are expected to have a 1-inch potable meter (i.e., one EDU for SFR) and a ¾-inch recycled water meter (i.e., one EDU). FCCs are therefore only displayed below for one EDU.

Table 7-1: Current Dual Plumbed Residential FCCs (effective Jan. 1, 2024)

Current Dual Plumbed Residential FCC for 1 EDU (1-inch Potable Water Meter & 3/4-inch Recycled Water Meter)	
Potable Water FCC	
Buy-in for Treatment/Transmission/Storage	$3,622
New Water Supply Projects	$1,776
Future Capital Projects	$10,593
Gabbro Soils Supplemental Charge	$345
Line & Cover 3 Supplemental Charge	$325
Subtotal – Potable Water FCC	**$16,661**
Recycled Water FCC	
Fixed Assets plus Future Capital Projects	$4,246
Subtotal – Recycled Water FCC	**$4,246**
Total Dual Plumbed FCC	**$20,907**

7.2 PROPOSED DUAL PLUMBED RESIDENTIAL FCC METHODOLOGY

WRE worked closely with District staff to evaluate and develop the proposed methodology used to calculate Dual Plumbed Residential FCCs in this study. The 2013 FCC Update Study applied an adjustment factor to the Potable Water FCC Buy-in and Incremental Cost components to establish a reduced Potable Water FCC for dual plumbed residential connections. The adjustment factor was set equal to the ratio of five-year average potable water unit demand from dual plumbed residential connections relative to single plumbed SFR customers and was applied to all capital assets and CIP projects except for transmission and distribution. This adjustment factor is necessary because dual plumbed residential customers only require potable water to meet indoor water needs, and therefore place less demand on system capacity than typical SFR customers.

WRE recommends that the same fundamental approach be retained to establish reduced Potable Water FCCs for dual plumbed residential connections. However, we recommend that the water demand adjustment factor be applied to all components of the Potable Water FCC, including the portion of the Buy-in and Incremental Cost components related to transmission and distribution. Dual plumbed residential connections theoretically require the same transmission and distribution capacity as typical SFR customers. However, dual plumbed residential connections place significantly lower average and peak demands on the potable water system because they do not supply water for outdoor irrigation. Because of this, dual plumbed residential customers effectively demand less potable water system capacity, which should be reflected in the Potable Water portion of the Dual Plumbed Residential FCCs. Please refer to Section 7.1 for additional reasons why a potable water adjustment factor for Dual Plumbed Residential FCCs is necessary and appropriate.

The 2013 FCC Update study did not apply an adjustment factor to any Recycled Water FCC components for dual plumbed residential connections, as the recycled water usage characteristics are not fundamentally different between dual plumbed and single plumbed recycled water users. WRE recommends retaining this practice and continuing to charge dual plumbed residential customers the standard Recycled Water FCC per EDU (i.e., no reduction).

7.3 ATTRIBUTION OF FCC COMPONENTS TO DUAL PLUMBED RESIDENTIAL FCCS

DUAL PLUMBED RESIDENTIAL POTABLE WATER DEMAND FACTOR

WRE evaluated five-year average potable water demand for SFR customers to determine a reasonable potable water demand adjustment factor for dual plumbed residential customers (see Table 7-2). The analysis was limited to historical water demand data for Zone 1 and Zone 2 of the District's service area, which corresponds to the El Dorado Hills region where dual plumbed residential service is available. All water demand data was obtained from the District's annual Consumption Reports for the years 2019-2023. Five-year average potable water unit demand was calculated separately for single plumbed SFR customers (see Table 7-2, Line 4) and dual plumbed SFR customers (see Table 7-2, Line 17). Dual plumbed potable water unit demand was adjusted to account for potable water supplementation to the recycled water system, as potable supplementation is necessary to ensure sufficient recycled water supply. With potable

supplementation accounted for, WRE calculated that five-year average potable water unit demand for dual plumbed residential connections is 59.7% of single plumbed SFR unit water demand.

Table 7-2: Dual Plumbed Residential Potable Water Demand Factor

Line	Potable Water Demand (Single Family Residential Zones 1 & 2)	2019	2020	2021	2022	2023	5-Year Average
1	**Single Plumbed Potable Water Use**						
2	Potable Water Demand (AFY)	4,842	5,543	5,470	5,428	5,169	5,290
3	Number of Services	9,468	9,855	10,212	10,378	10,554	10,093
4	Unit Demand (AFY per Service)[38]	0.51	0.56	0.54	0.52	0.49	0.52
5							
6	**Dual Plumbed Potable Water Use**						
7	Potable Water Demand (AFY)	824	918	925	902	887	891
8	Number of Services	5,350	5,357	5,454	5,451	5,494	5,421
9	Unit Demand (AFY per Service)[39]	0.15	0.17	0.17	0.17	0.16	0.16
10							
11	**Potable Water Supplement to Recycled Water System**						
12	Potable Water Demand (AFY)	612	751	1,182	881	745	834
13	Number of Services	5,537	5,546	5,638	5,642	5,686	5,610
14	Unit Demand (AFY per Service)[40]	0.11	0.14	0.21	0.16	0.13	0.15
15							
16	**Dual Plumbed Potable Water Demand (w/ Supplement)**						
17	Unit Demand (AFY per Service)[41]	0.26	0.31	0.38	0.32	0.29	0.31
18	Unit Demand (% of Single Plumbed)[42]	51.7%	54.5%	70.8%	61.5%	59.7%	59.7%

APPLICATION OF POTABLE WATER DEMAND FACTOR TO DUAL PLUMBED RESIDENTIAL FCCS

The proposed Dual Plumbed Residential FCC per EDU is a direct function of the proposed Potable Water FCC components and proposed Recycled Water FCC components (see Table 7-3). Each Potable Water FCC component (per Table 3-13) was multiplied by the dual plumbed residential potable water demand factor of 59.7% (per Table 7-2). This adjustment was necessary to account for the fact that dual plumbed residential customers require less system capacity from the potable water system than single plumbed potable water customers. No adjustments were applied to the Recycled Water FCC components (per Table 4-10), as dual plumbed and single plumbed recycled water demand is not differentiable.

[38] =[Line 2] ÷ [Line 3]
[39] =[Line 7] ÷ [Line 8]
[40] =[Line 12] ÷ [Line 13]
[41] =[Line 9] + [Line 14]
[42] =[Line 17] ÷ [Line 4]

Table 7-3: Attribution of FCC Components to Dual Plumbed Residential FCCs

Dual Plumbed Residential FCC Calculation	Proposed Single Plumbed FCC (per EDU)	Dual Plumbed Factor (%)	Proposed Dual Plumbed FCC (per EDU)
Potable Water			
Buy-In	$5,635	59.7%	$3,362
Incremental Cost	$27,504	59.7%	$16,411
Gabbro Soils Supplemental Charge	$345	59.7%	$206
Line & Cover 3 Supplemental Charge	$325	59.7%	$194
Subtotal	**$33,809**	**59.7%**	**$20,173**
Recycled Water			
Buy-In	$3,115	100.0%	$3,115
Incremental Cost	N/A	N/A	N/A
Subtotal	**$3,115**	**100.0%**	**$3,115**
Total	**$36,924**	**63.1%**	**$23,288**

7.4 PROPOSED DUAL PLUMBED RESIDENTIAL FCCS

The proposed Dual Plumbed Residential FCC per EDU (see Table 7-4) equals the sum of each adjusted Potable Water FCC component and Recycled Water FCC component per EDU (per Table 7-3). All future dual plumbed residential customers are expected to have a 1-inch potable meter (i.e., one EDU for SFR) and a ¾-inch recycled water meter (i.e., one EDU). FCCs are therefore only displayed for one EDU. The proposed Dual Plumbed Residential FCCs were developed using 2024 as a base year. Therefore, the District may apply annual CCI adjustments to the proposed FCCs beginning January 1, 2025, and each year thereafter.

The proposed Dual Plumbed Residential FCC per EDU is about $2,400 higher than the current FCC (see Table 7-5). The increase is due to the corresponding increase in the proposed Potable Water FCCs (due in large part to significant potable water incremental CIP). However, this impact is mitigated by the reduction in the proposed Recycled Water FCC.

Table 7-4: Proposed Dual Plumbed Residential Water FCC Calculation (per EDU)

Dual Plumbed Residential FCC Calculation	Proposed Dual Plumbed FCC
Potable Water FCC	
Buy-In	$3,362
Incremental Cost	$16,411
Gabbro Soils Supplemental Charge	$206
Line & Cover 3 Supplemental Charge	$194
Subtotal – Potable Water FCC	**$20,173**
Recycled Water	
Buy-In Component	$3,115
Incremental Cost Component	$0
Subtotal – Recycled Water FCC	**$3,115**
Total Dual Plumbed FCC	**$23,288**

Table 7-5: Comparison of Current and Proposed Dual Plumbed Residential FCCs (per EDU)

Comparison to Current Dual Plumbed Residential FCCs	
Proposed FCC (per EDU)	$23,288
Current FCC (per EDU)	$20,907
Difference ($)	*$2,381*

8. PRIVATE FIRE SERVICE FCC UPDATE

8.1 CURRENT PRIVATE FIRE SERVICE FCCS

Private fire service refers to potable water connections that are solely intended to be used for private fire protection purposes such as fire suppression sprinklers, private hydrants, and fire standpipes. The basis for the District's current Private Fire Service FCCs effective January 1, 2024 (see Table 8-1) was not evaluated during the 2013 FCC Update Study or prior capacity charge nexus study in 2008. Private fire service connections are currently only subject to FCCs if the connection size is 8-inch or 10-inch. All smaller connections are currently exempt from FCCs. The current Private Fire Service FCCs for 8-inch and 10-inch connections consist of a single "Private Fire Service" component. Due to limited documentation, it is challenging to discern details regarding the prior methodology underlying the currently adopted Private Fire Service FCCs.

Table 8-1: Current Private Fire Service FCCs (effective Jan. 1, 2024)

Connection Size	Private Fire Service	Total Private Fire Service FCC
6-inch and smaller	$0	**$0**
8-inch	$30,290	**$30,290**
10-inch	$47,710	**$47,710**

8.2 PRIVATE FIRE SERVICE FCC SURVEY

Water capacity charges for dedicated private fire service connections are uncommon among public retail water agencies in California. WRE surveyed six peer water agencies in the greater Sacramento area to better gain a better understanding of industry norms in the region. The agencies surveyed included the City of Folsom, City of Lincoln, Placer County Water Agency, Sacramento County Water Agency, San Juan Water District, and the City of Roseville. None of the agencies surveyed have unique water capacity charge schedules for dedicated private fire services.

8.3 PRIVATE FIRE SERVICE FCC RECOMMENDATIONS

Based on our survey results and further discussion with District staff, WRE recommends that the District discontinue its Private Fire Service FCCs. Under this recommendation, no new private fire service connections will be subject to an FCC, regardless of connection size. The reasons for this recommendation are as follows:

- Assessing a separate water capacity charge for dedicated private fire protection connections is not industry standard nor a common practice in California.
- Private fire service connections are fundamentally different from all other potable water connections. Use of private fire service connections is extremely rare and only in emergency. Private fire service connections not only provide a specific benefit to the customer, but also a broader public benefit by reducing the fire risk to surrounding properties and the broader service area. Furthermore, installation of a private fire service connection is often a legal

requirement imposed on the property owner by the fire department. Therefore, new users should arguably be exempted from paying for system capacity that provides public benefit and is legally mandated.

- New SFR potable water connections in the District are required to install a 1-inch meter to meet fire protection requirements, even though their non-fire demands could be met by a ¾-inch. These new connections are subject to FCCs based on the ¾-inch amount, which implies that FCCs should not apply to capacity associated with fire protection purposes. Private fire service connections should arguably be treated consistently, and thus also exempted from FCCs.

9. APPENDIX: EVALUATION OF REDUCED FCCS FOR AGE-RESTRICTED DEVELOPMENTS AND FCCS BASED ON BUILDING SQUARE FOOTAGE

Before and during the 2024 FCC Update Study, the District received requests by developers and building industry representatives to consider FCC reductions for age-restricted communities and to base FCCs on the square footage of the buildings they serve. Currently, age-restricted developments are subject to the same Potable Water and Wastewater FCCs as all other new residential developments. WRE worked with District staff to evaluate and consider whether 1) reduced FCCs for new potable water and wastewater connections at age-restricted housing developments are warranted; and 2) whether the District should differentiate its FCCs based on building square footage rather than meter capacity.

WRE surveyed surrounding water and wastewater agencies in the greater Sacramento area to determine whether comparable agencies have reduced capacity charges for age-restricted development. WRE did not identify any instances of reduced water capacity charges for age-restricted development among the agencies surveyed. However, three wastewater agencies surveyed currently have reduced wastewater capacity charges in effect for age-restricted development. These agencies include Sacramento Area Sewer District (40% reduction for age-restricted relative to other residential development), the City of Lincoln (28% reduction), and Placer County (29% reduction).

WRE supported District staff's efforts in evaluating the appropriateness of an FCC reduction for age-restricted households or FCCs based on building square footage. Ultimately, District staff, with Board input during an August 26, 2024 workshop, did not recommend the implementation of Potable Water FCC and Wastewater FCC reductions for age-restricted housing developments or FCCs based on building square footage for the following reasons:

- Capacity charges are intended to recover the proportional cost associated with the amount of capacity required to serve those charged. The most appropriate measure of the amount of capacity required for a connection is the size of the meter. Larger meters are capable of serving more water than smaller meters. Thus, the larger the meter, the more system capacity it requires. Once a meter is installed, it does not matter whether the user is a high user or a low user, but only that the user is capable of using up to the maximum capacity of the meter.
- Capacity charges are not intended to, and do not, recover the cost of the actual water served. That cost is recovered through water rates. Under the District's adopted rates, a lower water user will pay less in water rates than a higher water user with the same meter size. Although it is possible that age-restricted households have lower indoor water demands on average compared to other residential households (due to lower average occupancy), there is not clear evidence to support that age-restricted outdoor water demand is lower on average compared to other residential households. The same is true for residences with smaller indoor square footage. Although a 1,000 square foot residence might be reasonably expected to use

less water indoors than a 5,000 square foot residence, the smaller residence might use more water for outdoor irrigation than the larger residence. Likewise, a residence located in Pollock Pines, where the climate is generally cooler than El Dorado Hills, might use less water for outdoor irrigation than an age-restricted household or a residence of similar square footage located in El Dorado Hills. Irrespective of actual water use, a 1-inch meter serving an age-restricted residence or a smaller residence is capable of serving the same amount as a 1-inch meter serving a non-age-restricted residence or a larger residence (i.e., each 1-inch meter requires the same available system capacity).

- Recent water conservation requirements mandated by the State of California are resulting in reduced water demand and sewer flows across all residential households. Differences in indoor water demand between age-restricted and all other residences may reasonably be expected to decrease into the future.