San Francisco
Water Power Sewer
Services of the San Francisco Public Utilities Commission

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San Francisco, CA 94102
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November 2, 2023

Ms. Angela Calvillo
Clerk of the Board
City and County of San Francisco
1 Dr. Carlton B. Goodlett Place City Hall, Room 244
San Francisco, CA 94102

Dear Ms. Calvillo,

Please see the attached transmittal to the Board of Supervisors of the New Money Sale Report titled “Public Utilities Commission of the City and County of San Francisco $123,905,000 Power Revenue Bonds, 2023 Series A Board of Supervisors Bond Sale Report” prepared by the San Francisco Public Utilities Commission’s Municipal Advisor for the transaction, PFM Financial Advisors LLC. The 2023 Power Revenue Bonds, 2023 Series A were issued pursuant to authorization from the Board of Supervisors of the City and County of San Francisco to refund commercial paper and finance capital projects benefiting the Power Enterprise.

The Report to the Clerk of the Board of Supervisors showing the results of the bonds, together with a copy of the final Official Statement, are being provided in accordance with Board of Supervisors Ordinance 109-22.

Sincerely,

/s/ Nikolai J. Sklaroff

Nikolai J. Sklaroff
Capital Finance Director
San Francisco Public Utilities Commission

Public Utilities Commission of the City and County of San Francisco
$123,905,000
Power Revenue Bonds, 2023 Series A

Board of Supervisors Bond Sale Report

To: Public Utilities Commission of the City and County of San Francisco ("SFPUC")

From: PFM Financial Advisors LLC ("PFM")

Date: November 2, 2023

I. Background

Proposition A, approved by voters of the City of San Francisco in 2018, authorizes the issuance of revenue bonds by the SFPUC, when authorized by ordinance approved by a two-thirds vote of the Board of Supervisors of the City and County of San Francisco ("Board of Supervisors"). Under Ordinance No.41-15, Ordinance No. 113-16, Ordinance No. 142-18, Ordinance No. 152-19, Ordinance No. 172-20 and, most recently Ordinance No. 109-22, SFPUC is authorized to issue bonds for its power enterprise.

Pursuant to Resolution No. 23-0162, passed on September 20, 2023, the SFPUC issued $123.9 million of the Power Revenue Bonds, 2023 Series A (the "2023 Power Bonds") on October 12, 2023. The 2023 Power Bonds were issued to retire outstanding commercial paper notes previously issued to finance capital projects benefiting the Power Enterprise (as shown in Table 2 below).

Per Ordinance 109-22, within 30 days of bond issuance, the SFPUC must file with the Clerk of the Board of Supervisors a report ("Report") showing the results of the bond/note sale including (i) principal amount sold and method of sale, (ii) true interest cost, (iii) final maturity, (iv) the facilities constructed and/or improved, and (v) a statement about the remaining bond authorization under Ordinance 109-22.

The SFPUC has requested that PFM, who served as municipal advisor to the 2023 Power Bonds, prepare this Report for purposes of complying with the requirements set forth in Ordinance No. 109-22.

II. Bond Sale Report

On October 12, 2023, the SFPUC issued $123.9 million of the 2023 Power Bonds. The 2023 Power Bonds were sold pursuant to negotiated sale on September 27, 2023. The underwriting syndicate for the issuance was as follows: J.P. Morgan Securities LLC served as the senior manager, Morgan Stanley & Co. LLC served as the co-senior manager, and Siebert Williams Shank served as the co-manager. Bond statistics for the 2023 Power Bonds are provided in Table 1 below.

Table 1 | Summary Statistics: 2023 Power Bonds

	2023 Series A Bonds
Pricing Date	September 27, 2023
Closing Date	October 12, 2023
Method of Sale	Negotiated Sale
Underwriting Syndicate	J.P. Morgan Securities LLC (Senior Managing Underwriter) Morgan Stanley & Co. LLC (Co-Senior Managing Underwriter)

	Siebert Williams Shank (Co-Managing Underwriter)
Principal Amount Sold	$123.905 million
True Interest Cost	4.562%
Final Maturity	November 1, 2053

Table 2 below shows the projects which have been fully or partially funded with commercial paper which was repaid with the proceeds of the 2023 Power Bonds.

Table 2---Projects Funded with Commercial Paper
2023 Series A Bonds
SFO Substation
Moccasin Penstock
O'Shaughnessy Dam Outlet Works
Mountain Tunnel Inspection And
Mountain Tunnel Access/Additional Improvements
UH Wsy Physical Security Upgrades
Cherry Dam Outlet Works Rehabilitation
Transmission/Distribution System
Kirkwood Penstock
Ei Switchyard Slope Hazard Mitigation
2018 Moccasin Storm Small Facilities
R&R Priest Reservoir Landslide
Other Powerhouse Projects
Kirkwood Powerhouse Bypass Valves
UH O’Shaughnessy Dam Access & Drainage
Microwave System
2018 Moccasin Storm - Power Project
Cherry Reservoir Pumps
Moccasin Low Head Rehabilitation
Mt. Tunnel Expenses
Moccasin Powerhouse & GSU Rehabilitation
Warnerville Substation Rehabilitation
Transmission Line Clearance Mitigation
Power Infrastructure/Project D
Transmission Lines 7/8 Upgrades
R&R Powerhouse
R&R Power Transmission Life Extension
Moccasin PH Bypass Upgrades
Kirkwood PH Bypass Upgrades
R&R Priest Dam Condition Assessment
Moccasin Switchyard Rehabilitation
2023 January Winter Storm Joint
2023 March Winter Storm Joint
Moccasin Penstock Rehabilitation
Moccasin Facilities Upgrade
R&R Dam Condition Assessment & Rehabilitation
R&R Roads and Bridges
Facilities Security Project
R&R Communications Systems

Canyon Tunnel Rehabilitation
Moccasin Waste Water Treatment
Cherry Lake Spillway Improvements
Joint Project Development
O'Shaughnessy Dam Outlet Works Phase 1
R&R Power Distribution Improvements
Bridge Replacement
Moccasin Old Powerhouse Hazard Mitigation
R&R Power Distribution Fire Reduction
R&R HH Reservoir Boat Ramp Improvements
Early Intake Dam Interim Improvements
Moccasin Dam Long Term Improvements
UH Hetch Hetchy System O&M
Early Intake Dam - Long Term
Moccasin Engineering & Records Building
Switchyard/Substation Rehabilitation
Kirkwood Penstock
UH Power
Hetchy Water/Power Bonds
Series Loop Improvements
Bay Corridor Project
Intervening Facilities
Distribution Services Retail C
Red. Mission Rock
Red. HopeSF– Sunnydale
Red. Pier 70
Red. Balboa Reservoir
Red. HopeSF – Potrero
GC 2000 Marin - CDD Facility
UB Infrastructure
GC Grid Connections
GC Northern Waterfront

Remaining Authorization under Ordinance 109-22:

As of June 1, 2023, pursuant to Proposition A (the New Money Authorizing Legislation), the SFPUC had authorized but unissued power revenue bonds or other forms of indebtedness in the amount of $532,378,229 under Proposition A. Following the issuance of the 2023 Power Bonds, and the subsequent retirement of commercial paper notes with proceeds of the 2023 Power Bonds, the SFPUC has $408,473,229 of authorized but unissued bonds remaining under Proposition A.

A copy of the final Official Statement for the 2023 Power Bonds is included with this Report.

NEW ISSUE – BOOK-ENTRY ONLY

Ratings:
S&P: "AA"
Fitch: "AA-"
(see "RATINGS")

In the opinion of Stradling Yocca Carlson & Rauth, a Professional Corporation, Bond Counsel, under existing statutes, regulations, rulings and judicial decisions, and assuming the accuracy of certain representations and compliance with certain covenants and requirements described in this Official Statement, interest on the 2023A Bonds is excluded from gross income for federal income tax purposes and is not an item of tax preference for purposes of calculating the federal alternative minimum tax imposed on individuals. In the further opinion of Bond Counsel, interest on the 2023A Bonds is exempt from State of California personal income tax. See "TAX MATTERS" with respect to certain tax consequences relating to the 2023A Bonds, including with respect to the alternative minimum tax imposed on certain large corporations for tax years beginning after December 31, 2022.

San Francisco Water Power Sewer
Services of the San Francisco Public Utilities Commission

$123,905,000
PUBLIC UTILITIES COMMISSION OF THE CITY AND COUNTY OF SAN FRANCISCO
POWER REVENUE BONDS, 2023 SERIES A

Dated: Date of Delivery **Due:** As shown on inside front cover

General. **This cover page contains information for general reference only. It is not intended to be a summary of this issue. Potential purchasers are advised to read the entire Official Statement to obtain information essential to making an informed investment decision.**

Authority for Issuance. The Public Utilities Commission of the City and County of San Francisco (the "**SFPUC**") is issuing a single series of its Power Revenue Bonds, 2023 Series A (the "**2023A Bonds**"), pursuant to authority granted by the Charter of the City and County of San Francisco (the "**City**") and a Trust Indenture, dated as of May 1, 2015, as amended and supplemented, including as supplemented by a Third Supplemental Trust Indenture, dated as of October 1, 2023 (collectively, the "**Indenture**"), each by and between the SFPUC and U.S. Bank Trust Company, National Association, as trustee (the "**Trustee**").

Plan of Finance. The 2023A Bonds are being issued to (i) refund approximately $117.7 million principal amount of and interest on Commercial Paper Notes issued to finance a portion of the costs of various capital projects benefiting the Power Enterprise, (ii) fund capitalized interest on the 2023A Bonds to November 1, 2025, and (iii) pay costs of issuance of the 2023A Bonds.

Denominations and Interest. The 2023A Bonds will be available in denominations of $5,000 or any integral multiple thereof and will mature in the years and amounts and accrue interest from their date of delivery at the per annum rates set forth on the inside cover page of this Official Statement. Interest on the 2023A Bonds is payable semiannually on May 1 and November 1 of each year, commencing May 1, 2024.

Book-Entry Only. The 2023A Bonds will be issued as fully registered bonds, registered in the name of Cede & Co., as nominee of The Depository Trust Company ("**DTC**"), New York, New York, and will be available to ultimate purchasers (the "**Beneficial Owners**") under the book-entry only system maintained by DTC. Beneficial Owners will not receive physical certificates representing their interests in the 2023A Bonds. The principal of, premium, if any, and interest on the 2023A Bonds are payable to DTC by the Trustee, and, so long as DTC is acting as securities depository for the 2023A Bonds, disbursements of such payments to DTC Participants is the responsibility of DTC and disbursements of such payments to the Beneficial Owners is the responsibility of DTC Participants.

Redemption. The 2023A Bonds are subject to optional and mandatory redemption prior to maturity as described in this Official Statement.

Security. Under the Indenture, the SFPUC has irrevocably pledged the Revenues of its Power Enterprise, after payment of Operation and Maintenance Expenses and any Priority R&R Fund Deposits (each as defined herein), to the punctual payment of principal of, premium, if any, and interest on the Bonds, which consist of all outstanding parity revenue bonds issued under the Indenture, including the 2023A Bonds. The 2023A Bonds, all other Bonds and outstanding parity obligations permitted by the Indenture are secured by a parity lien on Revenues, after payment of Operation and Maintenance Expenses and any Priority R&R Fund Deposits. See "SECURITY FOR THE BONDS."

No Reserve Account. No Reserve Account will be established for the 2023A Bonds. See "SECURITY FOR THE BONDS – No Reserve Account for 2023A Bonds."

Limited Obligation. **The 2023A Bonds are special limited obligations of the SFPUC. The SFPUC is not obligated to pay the principal of, premium, if any, or interest on the 2023A Bonds from any source of funds other than Revenues, after payment of Operation and Maintenance Expenses and any Priority R&R Fund Deposits. Neither the general funds of the SFPUC nor the funds of any SFPUC enterprise (other than the Revenues and the funds pledged therefor under the Indenture) shall be liable for the payment on the 2023A Bonds. The SFPUC has no taxing power. The General Fund of the City is not liable for the payment of the principal of, premium, if any, or interest on the 2023A Bonds, and neither the credit nor the taxing power of the City is pledged to the payment of the principal of, premium, if any, or interest on the 2023A Bonds. The 2023A Bonds are not secured by a legal or equitable pledge of, or charge, lien, or encumbrance upon, any of the property of the City or of the SFPUC or any of its income or receipts, except Revenues, after payment of Operation and Maintenance Expenses and any Priority R&R Fund Deposits. The 2023A Bonds are not secured by or payable from the revenues of the SFPUC's Water Enterprise, Wastewater Enterprise or CleanPowerSF, or the revenues allocated to Hetch Hetchy Water. See "SECURITY FOR THE BONDS."**

MATURITY SCHEDULE
(see inside front cover)

The 2023A Bonds are offered when, as and if issued by the SFPUC and received by the Underwriters, subject to the approval of validity by Stradling Yocca Carlson & Rauth, a Professional Corporation, Newport Beach, California, Bond Counsel, and to certain other conditions. Orrick, Herrington & Sutcliffe LLP, San Francisco, California, is acting as Disclosure Counsel. PFM California Advisors LLC, San Francisco, California, Municipal Advisor to the SFPUC, assisted in the structuring of this financing. Certain matters will be passed upon for the Underwriters by Husch Blackwell LLP, Oakland, California. It is expected that the 2023A Bonds in fully registered form will be available for delivery in book-entry form through the facilities of DTC, on or about October 12, 2023.

J.P. Morgan **Morgan Stanley**

Siebert Williams Shank & Co., LLC

The date of this Official Statement is September 27, 2023.

MATURITY SCHEDULE

2023 Series A Bonds
(Base CUSIP* Number: 79771K)

$48,655,000 Serial Bonds

Maturity (November 1)	Principal Amount	Interest Rate	Yield†	Price†	CUSIP*
2026	$1,075,000	5.00%	3.25%	105.045%	DH6
2027	1,445,000	5.00	3.17	106.906	DJ2
2028	1,820,000	5.00	3.15	108.577	DK9
2029	1,920,000	5.00	3.15	110.120	DL7
2030	2,015,000	5.00	3.16	111.549	DM5
2031	2,130,000	5.00	3.21	112.611	DN3
2032	2,325,000	5.00	3.25	113.627	DP8
2033	2,525,000	5.00	3.29‡	113.292‡	DQ6
2034	2,655,000	5.00	3.38‡	112.541‡	DR4
2035	2,785,000	5.00	3.48‡	111.714‡	DS2
2036	2,915,000	5.00	3.61‡	110.650‡	DT0
2037	3,065,000	5.00	3.72‡	109.759‡	DU7
2038	3,220,000	5.00	3.83‡	108.877‡	DV5
2039	3,385,000	5.00	3.96‡	107.845‡	DW3
2040	3,560,000	5.00	4.05‡	107.137‡	DX1
2041	3,745,000	5.00	4.12‡	106.591‡	DY9
2042	3,935,000	5.00	4.21‡	105.893‡	DZ6
2043	4,135,000	5.00	4.24‡	105.662‡	EA0

$24,090,000 5.00% Term Bonds due November 1, 2048 Yield† 4.44%‡ Price† 104.134%‡ CUSIP* EB8
$51,160,000 5.00% Term Bonds due November 1, 2053 Yield† 4.50%‡ Price† 103.681%‡ CUSIP* EC6

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* CUSIP is a registered trademark of the American Bankers Association. CUSIP data herein are provided by CUSIP Global Services ("CGS"), which is managed on behalf of the American Bankers Association by FactSet Research Systems Inc. This data is not intended to create a database and does not serve in any way as a substitute for the CGS data base. Neither the SFPUC nor the Underwriters assume any responsibility for the accuracy of the CUSIP data.

† Reoffering yields and prices have been provided by the Underwriters. See "UNDERWRITING."

‡ Yield and price to the par call date of November 1, 2032.

San Francisco Public Utilities Commission
Power Facilities

Figure 1-1 – Provides a depiction of the SFPUC's power facilities (not to scale)

Hydroelectric power is generated by the SFPUC's power facilities, which consist of three hydroelectric powerhouses: Moccasin, Kirkwood, and Holm. Moccasin and Kirkwood receive water from the Hetch Hetchy Reservoir, while Holm is fed from Lake Eleanor and Lake Lloyd Reservoir (Cherry Lake). The electricity generated at the three powerhouses is transmitted through a system of high-voltage power transmission lines from the Sierra Nevada mountains across the Central Valley to PG&E's transmission system, interconnecting at Newark Substation. Electricity is transmitted through PG&E's transmission system to San Francisco. For more information, see "THE HETCH HETCHY PROJECT."

The 2023A Bonds are not secured by a legal or equitable pledge of, or charge, lien or encumbrance upon, any of the property of the SFPUC or of its income or receipts, except Revenues, after payment of Operation and Maintenance Expenses and any Priority R&R Fund Deposits (as each such term is defined herein). See "SECURITY FOR THE BONDS."

GENERAL STATEMENT

No dealer, broker, salesperson or other person has been authorized by the SFPUC to give any information or to make any representation other than those contained herein and, if given or made, such other information or representation must not be relied upon as having been authorized by the SFPUC.

This Official Statement does not constitute an offer to sell or the solicitation of an offer to buy, nor shall there be any sale of the 2023A Bonds, by any person in any jurisdiction in which it is unlawful for such person to make such an offer, solicitation, or sale. This Official Statement is not to be construed as a contract with the purchasers of the 2023A Bonds. Any statement made in this Official Statement involving any forecast or matter of estimates or opinion, whether or not expressly so stated, is intended solely as such and not as a representation of fact. The information set forth herein other than that provided by the SFPUC, although obtained from sources which are believed to be reliable, is not guaranteed as to accuracy or completeness. The information and expressions of opinion herein are subject to change without notice, and neither delivery of this Official Statement nor any sale made hereunder shall, under any circumstances, create any implication that there has been no change in the affairs of the SFPUC or the City since the date hereof.

The Underwriters have provided the following sentence for inclusion in this Official Statement: The Underwriters have reviewed the information in this Official Statement in accordance with, and as part of, their responsibilities to investors under the federal securities laws as applied to the facts and circumstances of this transaction, but the Underwriters do not guarantee the accuracy or completeness of such information.

The City maintains a website at https://sf.gov, and the SFPUC maintains a website at https://www.sfpuc.org. The information contained on such websites is not incorporated by reference and should not be relied upon in making an investment in the 2023A Bonds.

References to website addresses presented herein are for information purposes only and may be in the form of a hyperlink solely for the reader's convenience. Unless specified otherwise, such websites and the information or links contained therein are not incorporated into, and are not part of, this Official Statement.

The issuance and sale of the 2023A Bonds have not been registered under the Securities Act of 1933 in reliance upon the exemption provided thereunder by Section 3(a)(2) for the potential issuance and sale of municipal securities.

IN CONNECTION WITH THE OFFERING OF THE 2023A BONDS, THE UNDERWRITERS MAY OVERALLOT OR EFFECT TRANSACTIONS WHICH STABILIZE OR MAINTAIN THE MARKET PRICE OF THE 2023A BONDS AT LEVELS ABOVE THAT WHICH MIGHT OTHERWISE PREVAIL IN THE OPEN MARKET. SUCH STABILIZING, IF COMMENCED, MAY BE DISCONTINUED AT ANY TIME.

This Official Statement is delivered for use in connection with the issuance, sale, and delivery of the 2023A Bonds and may not be reproduced or used, in whole or in part, for any other purpose.

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FORWARD-LOOKING STATEMENTS

CERTAIN STATEMENTS CONTAINED IN THIS OFFICIAL STATEMENT REFLECT NOT HISTORICAL FACTS BUT FORECASTS AND ARE "FORWARD-LOOKING STATEMENTS." ALL FORWARD-LOOKING STATEMENTS ARE PREDICTIONS AND ARE SUBJECT TO KNOWN AND UNKNOWN RISKS AND UNCERTAINTIES. NO ASSURANCE CAN BE GIVEN THAT THE FUTURE RESULTS DISCUSSED HEREIN WILL BE ACHIEVED, AND ACTUAL RESULTS MAY DIFFER MATERIALLY FROM THE FORECASTS DESCRIBED HEREIN. IN THIS RESPECT, THE WORDS "ESTIMATE," "PROJECT," "ANTICIPATE," "EXPECT," "INTEND," "BELIEVE" AND SIMILAR EXPRESSIONS ARE INTENDED TO IDENTIFY FORWARD-LOOKING STATEMENTS. ALL PROJECTIONS, FORECASTS, ASSUMPTIONS, EXPRESSIONS OF OPINIONS, ESTIMATES AND OTHER FORWARD-LOOKING STATEMENTS ARE EXPRESSLY QUALIFIED IN THEIR ENTIRETY BY THE CAUTIONARY STATEMENTS SET FORTH IN THIS OFFICIAL STATEMENT. GIVEN THEIR UNCERTAINTY, INVESTORS ARE CAUTIONED NOT TO PLACE UNDUE RELIANCE ON SUCH STATEMENTS.

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SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Newsha Ajami, President
Sophie Maxwell, Vice President
Tim Paulson, Commissioner
Anthony Rivera, Commissioner
Kate H. Stacy, Commissioner

PUBLIC UTILITIES COMMISSION OFFICIALS

Dennis J. Herrera, General Manager
Ronald P. Flynn, Deputy General Manager and Chief Operating Officer
Nancy L. Hom, Chief Financial Officer and Assistant General Manager, Business Services
Barbara Hale, Assistant General Manager, Power Enterprise
Masood Ordikhani, Assistant General Manager, External Affairs
Stephen Robinson, Assistant General Manager, Infrastructure Division
Joel Prather, Acting Assistant General Manager, Wastewater Enterprise
Steven R. Ritchie, Assistant General Manager, Water Enterprise

CITY AND COUNTY OF SAN FRANCISCO

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London Breed

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CITY ATTORNEY
David Chiu

CITY TREASURER
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PFM California Advisors LLC
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Independent Pricing Consultant
Backstrom McCarley Berry & Co., LLC
San Francisco, California

Trustee
U.S. Bank Trust Company, National Association
San Francisco, California

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OFFICIAL STATEMENT

$123,905,000
PUBLIC UTILITIES COMMISSION OF
THE CITY AND COUNTY OF SAN FRANCISCO
POWER REVENUE BONDS, 2023 SERIES A

INTRODUCTION

This Introduction is qualified in its entirety by reference to the more detailed information included and referred to elsewhere in this Official Statement. The offering of the 2023A Bonds to potential investors is made only by means of the entire Official Statement. Terms used in this Introduction and not otherwise defined have the respective meanings assigned to them elsewhere in this Official Statement, including "APPENDIX A – SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE."

General

This Official Statement, including the cover page and Appendices hereto, is provided to furnish certain information in connection with the offering by the Public Utilities Commission of the City and County of San Francisco (the "**SFPUC**") of its Power Revenue Bonds, 2023 Series A (the "**2023A Bonds**").

Authority for Issuance

The SFPUC is issuing the 2023A Bonds pursuant to authority granted by the Charter (the "**Charter**") of the City and County of San Francisco (the "**City**"), ordinances passed by the Board of Supervisors of the City (the "**Board of Supervisors**") authorizing the issuance and sale of power revenue bonds and other forms of indebtedness of the SFPUC, a resolution adopted by the SFPUC governing body (the "**Commission**") on September 20, 2023, and a Trust Indenture, dated as of May 1, 2015, as amended and supplemented (the "**Master Indenture**"), including as supplemented by a Third Supplemental Trust Indenture, dated as of October 1, 2023 (the "**Third Supplemental Indenture**" and, together with the Master Indenture, the "**Indenture**"), each by and between the SFPUC and U.S. Bank Trust Company, National Association as trustee (the "**Trustee**").

The San Francisco Public Utilities Commission and the Power Enterprise

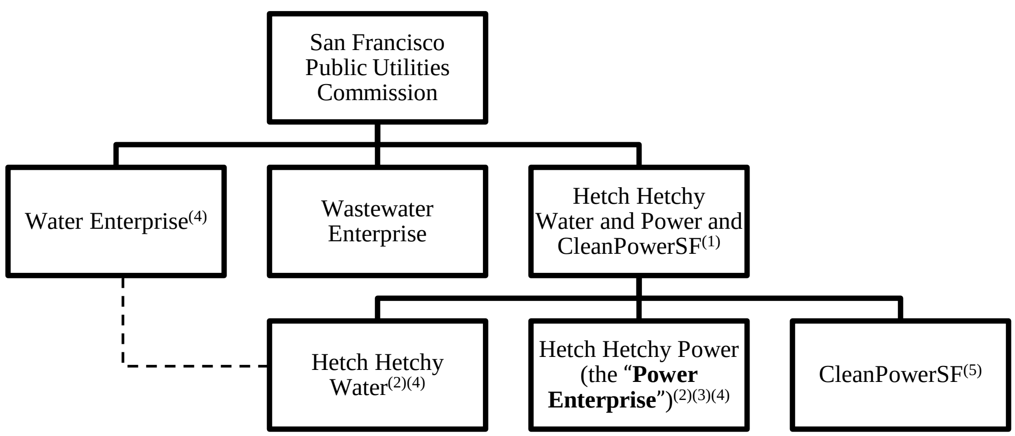
The SFPUC is a department of the City responsible for the maintenance, operation and development of three utility enterprises: (i) the Water Enterprise, (ii) the Wastewater Enterprise and (iii) Hetch Hetchy Water and Power and CleanPowerSF. The Water Enterprise provides drinking water to retail customers in San Francisco, to certain retail customers outside of San Francisco and to wholesale customers in San Mateo, Alameda and Santa Clara counties. The Wastewater Enterprise provides wastewater and stormwater collection, treatment and disposal services to residential, commercial, and industrial customers in San Francisco and three municipal sewer service providers serving residents and businesses in northern San Mateo County. For financial purposes, the Hetch Hetchy Water and Power and CleanPowerSF enterprise is comprised of three funds: (i) Hetch Hetchy Water, (ii) Hetch Hetchy Power (known as, and referred to in this Official Statement as, the "**Power Enterprise**") and (iii) CleanPowerSF. See "San Francisco Public Utilities Commission Enterprise Funds Organization Chart" below.

Hetch Hetchy Water operates and maintains the Hetch Hetchy Water and Power Project, including (i) the O'Shaughnessy Dam, the Hetch Hetchy Reservoir, the Canyon and Mountain Tunnels, the Kirkwood, Moccasin and Holm Powerhouses, Cherry Lake and its dam, Lake Eleanor and its dam, the related water storage and transportation and hydroelectric generating facilities down to and including the Moccasin Powerhouse, all located in Yosemite National Park, Stanislaus National Forest and Tuolumne County, the rights to which were granted to the City by the Raker Act of 1913 (the "**Raker Act**"), and (ii) the related transmission facilities down to the City of Newark, California ("**Newark**") (collectively, the "**Hetch Hetchy Project**"). The Power Enterprise provides hydroelectric, solar, and other power, serving City municipal customers, the Modesto Irrigation District ("**MID**") and the Turlock Irrigation District ("**TID**" and, collectively with MID, the "**Districts**"), and other public agencies and retail customers, and also provides pedestrian and streetlight services. The Power Enterprise also operates and maintains natural gas and electric utilities systems on Treasure Island/Yerba Buena Island pursuant to an agreement with Treasure Island Development Authority ("**TIDA**"). See "THE PUBLIC UTILITIES COMMISSION," "THE HETCH HETCHY PROJECT" and "THE POWER ENTERPRISE." CleanPowerSF ("**CleanPowerSF**"), a Community Choice Aggregation ("**CCA**") program that began serving customers in May 2016, is a "Separate System" under the Indenture. CleanPowerSF is financially independent from the Power Enterprise, with the ability to set rates and charges with adequate revenues and to issue debt to support its operations and future projects. See "THE PUBLIC UTILITIES COMMISSION – Organization, Purposes and Powers – *CleanPowerSF*."

Several Hetch Hetchy Project facilities are joint assets and are used for both water transmission and power generation and transmission, benefiting both Hetch Hetchy Water and the Power Enterprise (the "**Joint Facilities**"). All publicly-owned utility power sales revenues from providing hydroelectric, solar, and other power, all operating and capital costs benefiting the Power Enterprise, and 55% of the combined operating and capital costs of the Joint Facilities are allocated to the Power Enterprise. Operating and capital costs benefiting Hetch Hetchy Water and 45% of the combined operating and capital costs of the Joint Facilities are allocated to Hetch Hetchy Water. Hetch Hetchy Water's expenses are paid primarily from charges for service paid by the Water Enterprise, and are not secured by Revenues of the Power Enterprise.

The following chart shows the organizational structure of the SFPUC's three enterprise funds:

San Francisco Public Utilities Commission
Enterprise Funds Organization Chart



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(1) The "Hetch Hetchy Water and Power and CleanPowerSF" enterprise is comprised of three funds: (i) Hetch Hetchy Water, (ii) Hetch Hetchy Power (known as, and referred to in this Official Statement as, the "Power Enterprise"), and (iii) CleanPowerSF.

(2) Hetch Hetchy Water operates and maintains the Hetch Hetchy Project, which provides water for distribution through the Water Enterprise and hydroelectric power for delivery through the Power Enterprise.

(3) The Power Enterprise is responsible for all SFPUC power utility commercial transactions and in-city power operations.

(4) Several Hetch Hetchy Project facilities are joint assets and are used for both water transmission and power generation and transmission, benefiting both Hetch Hetchy Water and the Power Enterprise. All publicly-owned utility power sales revenues from providing hydroelectric, solar, and other power, all operating and capital costs benefiting the Power Enterprise, and 55% of the combined operating and capital costs of the Joint Facilities are allocated to the Power Enterprise. Operating and capital costs benefiting Hetch Hetchy Water and 45% of the combined operating and capital costs of the Joint Facilities are allocated to Hetch Hetchy Water. Hetch Hetchy Water's expenses are paid primarily from charges for service paid by the Water Enterprise, and are not secured by Revenues of the Power Enterprise.

(5) CleanPowerSF is a "Separate System" under the Indenture and financially independent from the Power Enterprise. References to the "Power Enterprise" in this Official Statement do not include CleanPowerSF.

The 2023A Bonds are secured by a pledge of Revenues, after payment of Operation and Maintenance Expenses and any Priority R&R Fund Deposits (each as defined herein). The 2023A Bonds are not secured by or payable from the revenues of the SFPUC's Water Enterprise, Wastewater Enterprise or CleanPowerSF, or the revenues allocated to Hetch Hetchy Water.

Purposes

The 2023A Bonds are being issued to (i) refund approximately $117.7 million principal amount of and interest on Commercial Paper Notes issued to finance a portion of the costs of various capital projects benefiting the Power Enterprise, (ii) fund capitalized interest on the 2023A Bonds to November 1, 2025, and (iii) pay costs of issuance of the 2023A Bonds. See "PLAN OF FINANCE."

Security for the Bonds

Under the Indenture, the SFPUC has irrevocably pledged the Revenues of its Power Enterprise, after payment of Operation and Maintenance Expenses and any Priority R&R Fund Deposits, to the payment of principal of, premium, if any, and interest on any parity revenue bonds issued under the Indenture, including the 2023A Bonds (collectively, the "**Bonds**"). The 2023A Bonds, all other Bonds and any other parity obligations permitted by the Indenture are secured by a parity lien on Revenues, after payment of Operation and Maintenance Expenses and any Priority R&R Fund Deposits. See "SECURITY FOR THE BONDS."

The 2023A Bonds are special limited obligations of the SFPUC. The SFPUC is not obligated to pay the principal of, premium, if any, or interest on the 2023A Bonds from any source of funds other than Revenues, after payment of Operation and Maintenance Expenses and any Priority R&R Fund Deposits. Neither the general funds of the SFPUC nor the funds of any SFPUC enterprise (other than the Revenues and the funds pledged therefor under the Indenture) shall be liable for payment of the 2023A Bonds. The SFPUC has no taxing power. The General Fund of the City is not liable for the payment of the principal of, premium, if any, or interest on the 2023A Bonds, and neither the credit nor the taxing power of the City is pledged to the payment of the principal of, premium, if any, or interest on the 2023A Bonds. The 2023A Bonds are not secured by a legal or equitable pledge of, or charge, lien or encumbrance upon, any of the property of the City or of the SFPUC or any of its income or receipts, except Revenues, after payment of Operation and Maintenance Expenses and any Priority R&R Fund Deposits. The 2023A Bonds are not secured by or payable from the revenues of the SFPUC's Water Enterprise, Wastewater Enterprise or CleanPowerSF, or the revenues allocated to Hetch Hetchy Water. See "SECURITY FOR THE BONDS."

No Reserve Account

No Reserve Account will be established for the 2023A Bonds. See "SECURITY FOR THE BONDS – No Reserve Account for 2023A Bonds."

Outstanding and Future Parity Obligations

The 2023A Bonds are the third Series of Bonds to be issued under the Master Indenture. The SFPUC has previously issued two Series of Bonds: (i) its Power Revenue Bonds, 2015 Series A (Green Bonds) (the "**2015A Bonds**"), and its Power Revenue Bonds, 2015 Series B (the "**2015B Bonds**" and together with the 2015A Bonds, the "**2015AB Bonds**") and (ii) its Power Revenue Bonds, 2021 Series A (Green Bonds) (the "**2021A Bonds**"), and its Power Revenue Bonds, 2021 Series B (the "**2021B Bonds**" and together with the 2021A Bonds, the "**2021AB Bonds**"). As of September 1, 2023, the 2015AB Bonds and the 2021AB Bonds are outstanding in the aggregate principal amount of $158,910,000 (collectively, the "**Outstanding Bonds**"). There are currently no other obligations of the SFPUC payable from Revenues on a parity with the Outstanding Bonds and the 2023A Bonds.

The SFPUC may issue additional Series of Bonds under the Master Indenture and may incur additional obligations payable from Revenues, after payment of Operation and Maintenance Expenses and any Priority R&R Fund Deposits, on a parity with the payment of the Outstanding Bonds and the 2023A Bonds. See "SECURITY FOR THE BONDS – Additional Series of Bonds" and "– No Senior Obligations; Other Parity Obligations."

Proposed Transaction with Pacific Gas & Electric Company

In September 2019, in connection with the bankruptcy of Pacific Gas & Electric Company ("**PG&E**") and PG&E Corporation, the City submitted a non-binding indication of interest to purchase substantially all of PG&E's electric distribution and transmission assets needed to provide retail electric service to all electricity customers within the geographic boundaries of San Francisco. The City subsequently submitted additional non-binding indications of interest to PG&E in September 2020 and May 2023. PG&E has not indicated a willingness to sell any such assets. The City remains interested in acquiring these assets from PG&E and, in July 2021, submitted a petition to the California Public Utilities Commission ("**CPUC**") for a formal determination of the fair market value of PG&E's assets the City is interested in acquiring. In April 2023, the City filed direct testimony of four expert witnesses with the CPUC regarding the specific assets under consideration for acquisition and the value of such assets. No transaction has been consummated, and neither the SFPUC nor the City are able to predict whether a transaction will be consummated or what the terms of any such transaction would be, if consummated. For more information regarding the proposed transaction, see "THE PUBLIC UTILITIES COMMISSION – Proposed Transaction with Pacific Gas & Electric Company."

Certain Risk Factors

Investment in the 2023A Bonds is subject to material risks. For a general overview of certain risk factors which should be considered, in addition to other matters set forth in this Official Statement, in evaluating an investment in the 2023A Bonds, see "CERTAIN RISK FACTORS."

Continuing Disclosure

The SFPUC will covenant for the benefit of the Owners and Beneficial Owners (each as defined herein) of the 2023A Bonds to provide certain financial information and operating data not later than March 31 following the end of its Fiscal Year (presently June 30), beginning on March 31, 2024, with the report for Fiscal Year 2022-23, and to provide notices of the occurrence of certain enumerated events. These covenants will be made to assist the Underwriters in complying with Rule 15c2-12(b)(5) of the Securities and Exchange Commission (the "**Rule**"). See "CONTINUING DISCLOSURE" and "APPENDIX D – FORM OF CONTINUING DISCLOSURE CERTIFICATE."

Other Matters

Brief descriptions of the 2023A Bonds, the security and sources of payment for the 2023A Bonds, the SFPUC, and the Power Enterprise are provided herein. Such descriptions do not purport to be comprehensive or definitive. Definitions of certain capitalized terms used herein may be found in "APPENDIX A – SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE." All references made to various documents herein are qualified in their entirety by reference to the forms thereof, all of which are available for inspection at the office of the SFPUC at:

San Francisco Public Utilities Commission
525 Golden Gate Avenue, 13th Floor
San Francisco, CA 94102
Attention: Chief Financial Officer and Assistant General Manager, Business Services
(415) 554-3155

THE 2023A BONDS

General

The 2023A Bonds will be dated their date of delivery and will accrue interest from the date of delivery at the rates per annum set forth on the inside cover page of this Official Statement. Interest on the 2023A Bonds is payable on May 1 and November 1 of each year, beginning May 1, 2024. Interest on the 2023A Bonds will be calculated on the basis of a 360-day year consisting of twelve 30-day months.

The 2023A Bonds will mature on the dates and in the principal amounts set forth on the inside cover page of this Official Statement. The 2023A Bonds will be issued in fully registered form in denominations of $5,000 or any integral multiple of $5,000.

Securities Depository and Book-Entry Only System

The 2023A Bonds will be issued in fully registered form, registered in the name of Cede & Co., as nominee for The Depository Trust Company ("**DTC**"), New York, New York, as the Owner of the 2023A Bonds.

So long as DTC, or its nominee, Cede & Co., is the registered owner ("**Owner**") of the 2023A Bonds, all payments on the 2023A Bonds will be made directly to DTC. Disbursement of such payments to the DTC Participants will be the responsibility of DTC, and disbursement of such payments to the Beneficial Owners of the 2023A Bonds will be the responsibility of the DTC Participants. See "APPENDIX E – SECURITIES DEPOSITORY AND THE BOOK-ENTRY SYSTEM."

Redemption

Optional Redemption. The 2023A Bonds maturing on and after November 1, 2033 are subject to redemption prior to their respective stated maturity dates, at the option of the SFPUC, from any source of available funds, as a whole or in part, in Authorized Denominations, on any date on or after November 1, 2032, and if in part by lot within such maturity of 2023A Bonds, at a Redemption Price equal to 100% of the principal amount of 2023A Bonds to be redeemed, together with accrued interest thereon to the date fixed for redemption, without premium.

Mandatory Sinking Fund Redemption. The 2023A Bonds maturing on November 1, 2048 and November 1, 2053 are further subject to redemption prior to their stated maturity, in part by lot, from Mandatory Sinking Fund Payments required to be made by the SFPUC as specified below to be deposited in the 2023A Bond Retirement Account, on each November 1 on or after November 1, 2044 and November 1, 2049, respectively, at a Redemption Price equal to the principal amount thereof to be redeemed and accrued interest thereon to the date fixed for redemption, without premium.

The 2023 Series A Term Bonds maturing on November 1, 2048 shall be redeemed from Mandatory Sinking Fund Payments in the following principal amounts on the dates indicated below.

Redemption Date (November 1)	Principal Amount
2044	$4,350,000
2045	4,570,000
2046	4,805,000
2047	5,050,000
2048†	5,315,000

† Maturity

The 2023 Series A Term Bonds maturing on November 1, 2053 shall be redeemed from Mandatory Sinking Fund Payments in the following respective principal amounts on the dates indicated below.

Redemption Date (November 1)	Principal Amount
2049	$5,580,000
2050	5,870,000
2051	6,170,000
2052	16,350,000
2053†	17,190,000

† Maturity

In the event less than all of the Term Bonds of a single maturity are purchased or called for optional redemption, the Mandatory Sinking Fund Payments for such Term Bonds to be reduced shall be specified by the SFPUC.

Selection of 2023A Bonds for Redemption. If less than all of the 2023A Bonds are called for redemption, the maturities of the 2023A Bonds to be redeemed (in whole or in part) shall be determined by the SFPUC. Subject to DTC's procedures relating to the selection of bonds for redemption (see "APPENDIX E – SECURITIES DEPOSITORY AND THE BOOK-ENTRY SYSTEM"), whenever less than all of the 2023A Bonds of any one maturity are called for redemption, the Trustee will select the 2023A Bonds of the maturity to be redeemed by lot from the Outstanding 2023A Bonds of that maturity. For purposes of such selection, 2023A Bonds will be deemed to be made up of $5,000 portions of principal.

Notice of Redemption. Notice of redemption will be mailed by the Trustee at least thirty (30) days but not more than sixty (60) days prior to the redemption date, to DTC (so long as the DTC Book-Entry System is used). The actual receipt by the owner of any 2023A Bond of notice of such redemption is not a condition precedent to redemption, and failure to receive a redemption notice or any defect in a redemption notice will not affect the redemption or the validity of the proceedings for the redemption of such 2023A Bonds. See "APPENDIX E – SECURITIES DEPOSITORY AND THE BOOK-ENTRY SYSTEM."

Conditional Redemption; Rescission of Notice of Redemption. In the case of optional redemption of 2023A Bonds, the notice of redemption may state (i) that it is conditioned upon the deposit of money, in an amount equal to the amount necessary to effect the redemption with the Trustee no later than the redemption date, or (ii) that the SFPUC retains the right to rescind such notice on or prior to the scheduled redemption date (in either case, a "**Conditional Redemption**"), and such notice and optional redemption will be of no effect if such money is not deposited or if the notice is rescinded. The SFPUC may, at its option, prior to the date fixed for redemption in any notice of Conditional Redemption, rescind and cancel such notice of redemption by written request to the Trustee and the Trustee will give notice of such cancellation to the recipients of the notice of redemption being cancelled.

Effect of Redemption. When notice of redemption has been duly given as described above, and moneys for payment of the redemption price are held by the Trustee, the 2023A Bonds called for redemption will, unless the SFPUC has given notice of recission of the notice of redemption therefor as described above, on the redemption date designated in the redemption notice, become due and payable at the redemption price specified in such notice; and from and after the date so designated interest on the 2023A Bonds called for redemption will cease to accrue, and such 2023A Bonds will no longer be entitled to any benefit or security under the Indenture, and the Owners of said 2023A Bonds will have no rights in respect thereof except to receive payment of the redemption price thereof. The Trustee, upon surrender for payment of any of said 2023A Bonds, will pay such 2023A Bonds at the redemption price, together with accrued interest thereon. All 2023A Bonds redeemed will be cancelled upon surrender and no 2023A Bonds will be issued in place thereof.

Defeasance

The obligations of the SFPUC and the pledge, lien, covenants and agreements of the SFPUC made or provided for in the Indenture will be fully discharged and satisfied as to any 2023A Bond and such Bond will no longer be deemed outstanding thereunder if certain conditions set forth in the Indenture are satisfied. See "APPENDIX A – SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE – Discharge and Defeasance."

PLAN OF FINANCE

The 2023A Bonds are being issued to (i) refund approximately $117.7 million principal amount of and interest on Commercial Paper Notes issued to finance a portion of the costs of various capital projects benefiting the Power Enterprise, (ii) fund capitalized interest on the 2023A Bonds to November 1, 2025, and (iii) pay costs of issuance of the 2023A Bonds. See "ESTIMATED SOURCES AND USES OF FUNDS."

ESTIMATED SOURCES AND USES OF FUNDS

Proceeds of the 2023A Bonds are expected to be applied approximately as set forth below:

Sources	
Par Amount	$123,905,000.00
Original Issue Premium	7,324,363.80
Total Sources of Funds	**$131,229,363.80**
Uses	
Refunding of Commercial Paper Notes[(1)]	$117,670,922.29
Deposit to 2023 Capitalized Interest Account[(2)]	12,717,471.53
Costs of Issuance[(3)]	601,188.32
Underwriters' Discount	239,781.66
Total Uses of Funds	**$131,229,363.80**

(1) Includes accrued interest.
(2) To pay interest on the 2023A Bonds to November 1, 2025.
(3) Including amounts for rating agency fees, fees for legal services, fees for municipal advisor, fees for independent pricing consultant, Trustee's fees and expenses, printing costs, and other costs relating to the issuance of the 2023A Bonds.

SECURITY FOR THE BONDS

Pledge of Revenues

General. Under the Indenture, the SFPUC has pledged and placed a lien and charge upon the Revenues of the Power Enterprise, after payment of Operation and Maintenance Expenses and any Priority R&R Fund Deposits, to the payment of the Bonds, which consist of any parity revenue bonds issued under the Indenture, including the 2023A Bonds, and any additional Series of Bonds. This pledge is subject to the flow of funds contained in the Indenture, as described below. See "– Flow of Funds."

No facilities of the Power Enterprise or the SFPUC have been pledged or mortgaged for, nor do they otherwise secure, payment of the Bonds.

Pursuant to Section 5451 of the California Government Code, the pledge of, lien on and security interest in Revenues, after payment of Operation and Maintenance Expenses and any Priority R&R Fund Deposits, granted by the Indenture to secure the payment of the Bonds is valid and binding in accordance with the terms thereof from the time such pledge was made, such Revenues being immediately subject to such pledge, and such pledge constituting a lien and security interest immediately attaching to such Revenues and effective, binding and enforceable against the SFPUC, its successors, creditors and all others asserting rights therein to the extent set forth and in accordance with the terms of the Indenture irrespective of whether those parties have notice of such pledge and without the need for any physical delivery, recordation, filing or other further act. Such pledge, lien and security interest are not subject to the provisions of Article 9 of the California Uniform Commercial Code.

For definitions of capitalized terms used herein and not otherwise defined, see "APPENDIX A – SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE – Definitions."

Power Enterprise. The Indenture defines "Power Enterprise" as the SFPUC's Power Enterprise, existing as of the date of the Master Indenture to provide electric power and related services to the City and its departments, agencies and commissions as well as other customers both in and outside of the City, including that portion of the Hetch Hetchy Project allocable to power generation, all other power generation, transmission and distribution facilities and related facilities, streetlights, property and rights constituting a part of the Power Enterprise, and any and all additions, improvements, betterments, renewals, replacements and repairs thereto and extensions thereof, but shall not include: (a) the Water Enterprise, (b) the Wastewater Enterprise, or (c) any Separate System.

The Indenture defines the "Hetch Hetchy Project" as the Hetch Hetchy Water and Power Project, including the O'Shaughnessy Dam, the Hetch Hetchy Reservoir, the Canyon and Mountain Tunnels, the Kirkwood, Moccasin and Holm Powerhouses, Cherry Lake and its dam, Lake Eleanor and its dam, the related water storage and transportation and hydroelectric generating facilities down to and including the Moccasin Powerhouse, all located in Yosemite National Park, Stanislaus National Forest and Tuolumne County, the rights to which were granted to the City by the Raker Act, and the related transmission facilities down to Newark.

The Indenture defines a "Separate System" as any electric power or energy generation, transmission, distribution or other facilities, property and rights that may be, after the date of the Master Indenture, purchased, constructed or otherwise acquired by the SFPUC where the revenues derived from the ownership and operation of which shall be pledged to the payment of bonds or other obligations for borrowed money issued or incurred to purchase, construct or otherwise acquire such facilities, property and rights and shall not be included in Revenues and the operation and maintenance expenses with respect to which shall not be included in Operation and Maintenance Expenses. CleanPowerSF is a "Separate System" under the Indenture.

Net Revenues. The Indenture defines "Net Revenues" as, for any Fiscal Year (or other designated twelve-month period) all of the Revenues in such Fiscal Year (or other designated twelve-month period), less all Operation and Maintenance Expense and Priority R&R Fund Deposits, if any, for such Fiscal Year (or other designated twelve-month period).

For purposes of the Indenture, "Revenues" means all revenues, rates and charges received and accrued by the SFPUC for electric power and energy and other services, facilities and commodities sold, furnished or supplied by the Power Enterprise, together with income, earnings and profits therefrom (including interest earnings on the proceeds of any Bonds pending application thereof), as determined in accordance with GAAP. Revenues shall include payments to the Power Enterprise from any Separate System maintained by the SFPUC on or with respect to loans made by the Power Enterprise to such Separate System. Revenues shall not include (a) proceeds from the issuance of any obligations for borrowed money, (b) amounts loaned to the Power Enterprise, (c) Swap Agreement Receipts, (d) proceeds from taxes, (e) customer deposits while retained as such, (f) contributions in aid of construction, (g) gifts, (h) grants, (i) insurance or condemnation proceeds that are properly allocable to a capital account, (j) non-cash revenues or gains that may be required or permitted under GAAP, including mark-to-market gains and deferred revenues, (k) money received by the SFPUC as the proceeds of the sale of any portion of the properties of the Power Enterprise, (l) amounts by their terms not available for the payment of Operation and Maintenance Expenses or principal and interest on the Bonds, (m) Refundable Credits, (n) revenues of any Separate System (including CleanPowerSF), (o) Water Enterprise revenues and (p) Wastewater Enterprise revenues.

For purposes of the Indenture, "Operation and Maintenance Expenses" means the costs of the proper operation, maintenance and repair of the Power Enterprise and taxes, assessments or other governmental charges lawfully imposed on the Power Enterprise or the Revenues, or payments in lieu thereof, as determined in accordance with GAAP. Operation and Maintenance Expenses shall include the payment of pension charges and proportionate payments to such compensation and other insurance or outside reserve funds as the SFPUC may establish or the Board of Supervisors may require with respect to employees of the Power Enterprise, as provided in Section 16.103(a) of the Charter. Operation and Maintenance Expenses shall also include repairs and maintenance costs that constitute operating expenses in accordance with GAAP. Operation and Maintenance Expenses shall not include (a) any allowance for amortization, depreciation or obsolescence, (b) operation and maintenance expenses of the Water Enterprise, (c) operation and maintenance expenses of the Wastewater Enterprise, (d) operation and maintenance expenses of any Separate System (including CleanPowerSF), (e) any expense for which, or to the extent to which, the SFPUC is or will be paid or reimbursed from or by any source that is not included or includable as Revenues, (f) losses from any sale or other disposition of Power Enterprise assets, and (g) non-cash losses and costs that may be required or permitted under GAAP, including deferred expenses and unrealized mark-to-market losses.

For purposes of the Indenture, "Priority R&R Fund Deposits" means, for any Fiscal Year or other designated twelve-month period, the amount, if any, required by the Charter to be deposited into the Reconstruction and Replacement Fund from Revenues prior to deposits in such Fiscal Year into the Bond Fund. The SFPUC has determined that no Priority R&R Fund Deposits are presently required. Priority R&R Fund Deposits could, however, be required in the future.

For purposes of the Indenture, "Refundable Credits" means amounts payable by the federal government under direct-pay subsidy programs substantially similar to the Build America Bond program under Section 54AA of the Internal Revenue Code of 1986, as amended (the "**Code**").

The Indenture defines "Swap Agreement Payments" as the regularly scheduled net amounts required to be paid by the SFPUC to the Qualified Counterparty pursuant to a Swap Agreement and "Swap Agreement Receipts" as the regularly scheduled net amounts required to be paid by a Qualified Counterparty to the SFPUC pursuant to a Swap Agreement. The SFPUC has not entered into any Swap Agreements payable from Revenues. See "– No Senior Obligations; Other Parity Obligations."

Limited Obligations

The 2023A Bonds are special limited obligations of the SFPUC. The SFPUC is not obligated to pay the principal of, premium, if any, or interest on the 2023A Bonds from any source of funds other than Revenues, after payment of Operation and Maintenance Expenses and any Priority R&R Fund Deposits. Neither the general funds of the SFPUC nor the funds of any SFPUC enterprise (other than the Revenues and the funds pledged therefor under the Indenture) shall be liable for the payment on the 2023A Bonds. The SFPUC has no taxing power. The General Fund of the City is not liable for the payment of the principal of, premium, if any, or interest on the 2023A Bonds, and neither the credit nor the taxing power of the City is pledged to the payment of the principal of, premium, if any, or interest on the 2023A Bonds. The 2023A Bonds are not secured by a legal or equitable pledge of, or charge, lien or encumbrance upon, any of the property of the City or of the SFPUC or any of its income or receipts, except Revenues, after payment of Operation and Maintenance Expenses and any Priority R&R Fund Deposits. The 2023A Bonds are not secured by or payable from the revenues of the SFPUC's Water Enterprise, Wastewater Enterprise or CleanPowerSF, or the revenues allocated to Hetch Hetchy Water.

Flow of Funds

In the Indenture, the SFPUC covenants and agrees that it will pay into the Revenue Fund as received all Revenues and further covenants and agrees that all Revenues shall be trust funds in the hands of the SFPUC and shall be used and applied as provided by the Indenture, solely for the purposes of operating and maintaining the Power Enterprise and paying all costs, charges and expenses in connection therewith and for the purpose of making repairs, renewals and replacements to the Power Enterprise and constructing additions, betterments and extensions thereto, and for the purpose of paying the Bonds, the Swap Agreement Payments, if any, and all other charges or obligations against the Revenues of whatever nature now or hereafter imposed thereon by law or contract. All such disbursements and deposits must be made in accordance with the provisions of the Charter, including Section 16.103 thereof.

The Indenture provides that Revenues deposited in the Revenue Fund shall be disbursed in the following order of priority:

First, for the payment of Operation and Maintenance Expenses;

Second, for any Priority R&R Fund Deposits;

Third, for deposit in the Interest Account of each Bond Fund;

Fourth, for deposit in the Bond Retirement Account of each Bond Fund;

Fifth, for deposit in the Reserve Fund (as applicable);

Sixth, (i) for the payment of principal and premium, if any, and interest on any Subordinate Obligations; (ii) for deposit into a reserve fund securing any Subordinate Obligations; (iii) for Swap Agreement Payments pursuant to Swap Agreements entered into by the SFPUC with respect to any Subordinate Obligations; and (iv) for payment to any financial institution or insurance company providing any letter of credit, line of credit, or other credit or liquidity facility, including municipal bond insurance and guarantees, that secures the payment of principal of or interest on any Subordinate Obligations; in each case in any order of priority within this paragraph which may be hereafter established by the SFPUC by resolution;

Seventh, for any Additional R&R Fund Deposits into the Reconstruction and Replacement Fund;

Eighth, for any necessary or desirable capital additions or improvements to the Power Enterprise;

Ninth, for any payment under a Take-or-Pay Power Purchase Agreement that does not constitute an Operation and Maintenance Expense;

Tenth, for any payment under a Swap Agreement that does not constitute a Swap Agreement Payment; and

Eleventh, for any other lawful purpose of the SFPUC.

In the Indenture, the SFPUC covenants and agrees to transfer to the Trustee for deposit in the Interest Account of each applicable Bond Fund all Refundable Credits received by the SFPUC.

Rate Covenant; Rates and Charges

In the Indenture, the SFPUC has covenanted to fix, establish, maintain and collect rates and charges for electric power and energy and other services, facilities and commodities sold, furnished or supplied through the Power Enterprise, which shall be fair and nondiscriminatory and adequate, together with other revenues of the Power Enterprise, to provide the SFPUC with Revenues sufficient to satisfy the covenants described in the next paragraph. The SFPUC will not be required to impose rates and charges in violation of (i) applicable provisions of the Raker Act or any successor statute; (ii) any other applicable federal or state statutes or regulations; or (iii) any current or future contract or agreement between any City enterprise department, agency or commission, and its customers, tenants or other parties thereto. See "CERTAIN RISK FACTORS – Limitations on Rate-Setting" and "– Raker Act Requirements."

In the Indenture, the SFPUC has covenanted that the Revenues in each Fiscal Year will be sufficient:

(i) To pay, to the extent not paid from other available moneys, (A) the Operation and Maintenance Expenses during such Fiscal Year, (B) Annual Debt Service on the Bonds due and payable in such Fiscal Year, (C) the amounts, if any, required to be deposited into the Reserve Fund during such Fiscal Year and (D) any and all other amounts the SFPUC is obligated to pay or set aside from the Revenues by law or contract in such Fiscal Year;

(ii) To maintain a Bond Coverage Ratio of at least 1.00 to 1.00; and

(iii) Together with Available Funds, to maintain a Bond Coverage Ratio of at least 1.25 to 1.00.

The failure of the SFPUC to maintain the Bond Coverage Ratio in any Fiscal Year will not constitute a default in the observance of the covenants described above if, (i) within 60 days after the SFPUC first determines that the Bond Coverage Ratio was not met or 60 days after the SFPUC's receipt of audited financial statements showing that the Bond Coverage Ratio was not met (whichever is earlier), the SFPUC engages a Consulting Engineer to deliver a report to the SFPUC within 60 days after such engagement which includes recommendations as to how the SFPUC can increase Revenues and/or reduce Operation and Maintenance Expenses so as to satisfy the Bond Coverage Ratios; and if (ii) (A) within 120 days after receipt of the Consulting Engineer's report the SFPUC implements the recommendations set forth in such report, or (B) the report states that the Power Enterprise cannot generate Revenues and/or reduce Operation and Maintenance Expenses sufficiently to enable the SFPUC to maintain the Bond Coverage Ratios while satisfying the other covenants set forth in the Indenture and the SFPUC increases its Revenues and/or reduces its Operation and Maintenance Expenses to the extent otherwise recommended in such report, or (C) the SFPUC is prevented from taking any such action by order of any court of competent jurisdiction. Notwithstanding the foregoing, failure for two consecutive Fiscal Years to maintain the Bond Coverage Ratios shall in all events constitute an Event of Default.

For purposes of the Indenture, "Bond Coverage Ratio" for any Fiscal Year means the ratio of (a) (i) Net Revenues in such Fiscal Year, plus (ii) Available Funds in such Fiscal Year, to (b) Annual Debt Service on the Outstanding Bonds in such Fiscal Year; "Annual Debt Service" means, as of any date of calculation, for any Fiscal Year (or other designated twelve-month period) the amount of Principal and interest becoming due and payable on all Outstanding Bonds in such Fiscal Year (or other designated twelve-month period) computed as provided in the Indenture less the amount of any Refundable Credits due to the SFPUC with respect to interest coming due in such Fiscal Year; and "Available Funds" means any unencumbered amounts, including non-appropriated fund balances and reserves, and cash and the book value of investments held by the Treasurer of the City (the "**Treasurer**") for the Power Enterprise, that the SFPUC reasonably expects would be available, as of any date of calculation, to pay Principal of and interest on Bonds when due. See "APPENDIX A – SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE."

No Reserve Account for 2023A Bonds

No Reserve Account is being established that would secure the 2023A Bonds. The 2023A Bonds are not a Common Reserve Series secured by the Common Reserve Account.

Reconstruction and Replacement Fund

The Indenture creates a special fund of the SFPUC known as the "Power Enterprise Reconstruction and Replacement Fund," to be held by the Treasurer and administered by the SFPUC. The SFPUC covenants and agrees to deposit and maintain in the Reconstruction and Replacement Fund an amount at least equal to the amount, if any, required to be on deposit therein pursuant to the Charter. Amounts in the Reconstruction and Replacement Fund shall be applied to pay costs of reconstruction and replacement of the properties constituting a part of the Power Enterprise due to physical and functional depreciation.

No Senior Obligations; Other Parity Obligations

The Indenture prohibits the SFPUC from issuing or incurring any obligations (other than obligations constituting Operations and Maintenance Expenses) or issuing or creating additional indebtedness payable from Revenues senior to payment of the 2023A Bonds and from issuing or incurring any obligations or issuing or creating additional indebtedness payable from Revenues on a parity with the 2023A Bonds other than Bonds and Swap Agreements. The Indenture defines "Swap Agreement" as any financial instrument that (a) is entered into by the SFPUC with a party that is a Qualified Counterparty at the time the instrument is entered into; (b) is entered into with respect to all or a portion of a Series of Bonds; (c) is for a term not extending beyond the final maturity of the

Series of Bonds or portion thereof to which it relates; (d) provides that the SFPUC shall pay to such Qualified Counterparty an amount accruing at either a fixed rate or a variable rate, as the case may be, on a notional amount equal to or less than the principal amount of the Series of Bonds or portion thereof to which it relates, and that such Qualified Counterparty shall pay to the SFPUC an amount accruing at either a variable rate or fixed rate, as appropriate, on such notional amount; (e) provides that one party shall pay to the other party any net amounts due under such instrument; and (f) which has been designated to the Trustee in the Supplemental Trust Indenture authorizing the issuance of the related Series of Bonds or portion thereof or in a Certificate of the SFPUC as a Swap Agreement with respect to such Bonds. The SFPUC has not entered into any Swap Agreements.

Additional Series of Bonds

The Charter and the Indenture authorize the issuance of additional Series of Bonds payable from Revenues, after payment of Operation and Maintenance Expenses and any Priority R&R Fund Deposits, on parity with the Outstanding Bonds and the 2023A Bonds upon satisfaction of the conditions set forth therein.

The SFPUC expects to issue additional Series of Bonds to finance the costs of additional improvements to the facilities of the Power Enterprise (the "**Power Facilities**"). See "POWER ENTERPRISE CAPITAL PROGRAM."

Charter Requirements. Under the Charter, the SFPUC may issue revenue bonds (including additional Series of Bonds) relating to the Power Enterprise upon satisfaction of the requirements described under "OBLIGATIONS PAYABLE FROM REVENUES – Authority for Issuance of Revenue Bonds and Other Obligations Payable from Revenues."

Indenture Requirements. The Indenture provides that additional Series of Bonds secured on a parity with the Bonds may be issued for any lawful purpose if prior to the issuance of such additional Series of Bonds, the SFPUC has filed with the Trustee, among other documents, the following:

(a) A written opinion of Bond Counsel to the effect that (i) such Series of Bonds are valid and binding limited obligations of the SFPUC enforceable against the SFPUC in accordance with their terms and (ii) the Indenture, including the Supplemental Trust Indenture authorizing the issuance of such Series of Bonds, is a valid and binding obligation of the SFPUC enforceable in accordance with its terms; provided, that such opinions may be qualified to the extent that the enforceability of the Bonds and the Indenture, including the Supplemental Trust Indenture authorizing the issuance of such Series of Bonds, may be limited by bankruptcy, insolvency, reorganization or similar laws affecting the enforcement of creditors' rights generally and by general equitable principles;

(b) A Certificate of the SFPUC stating that (i) no Event of Default, nor any event or condition which with notice and/or the passage of time would constitute an Event of Default, has occurred and is continuing under the Indenture as of the date of issuance of such Series of Bonds and (ii) the issuance of such Series of Bonds, in and of itself, will not cause an Event of Default under the Indenture;

(c) A Certificate of the SFPUC to the effect that provision has been made for the immediate deposit into the Reserve Account for such Series of Bonds of money, Authorized Investments, Reserve Account Credit Facility or Facilities or any combination of the foregoing in an aggregate amount equal to the Reserve Requirement, if any, for such Series of Bonds; and

(d) Either,

(i) A Certificate of the SFPUC stating that, in each of the first three full Fiscal Years after the sale of such Series of Bonds, projected Net Revenues:

(A) *Plus* Available Funds, are at least 1.25 times Annual Debt Service on the Outstanding Bonds, after giving effect to the issuance of such Series of Bonds, and

(B) Are at least 1.0 times Annual Debt Service on the Outstanding Bonds, plus required deposits into the Reserve Fund, after giving effect to the issuance of such Series of Bonds; or

(ii) A Certificate of the SFPUC stating that Net Revenues from any twelve consecutive months of the prior twenty-four months:

(A) *Plus* Available Funds, are at least 1.25 times the Annual Debt Service on the Bonds Outstanding, after giving effect to the issuance of such Series of Bonds, and

(B) Are at least 1.0 times Annual Debt Service on the Bonds Outstanding, plus required deposits into the Reserve Fund, after giving effect to the issuance of such Series of Bonds.

For purposes of paragraph (ii) the following adjustments may be made to Net Revenues for such period, if so stated in the Certificate of the SFPUC:

(I) An allowance for additional Revenues anticipated from any additions, extensions and improvements to the Power Enterprise to be acquired or constructed from proceeds of such or a prior Series of Bonds and for any changes in Operation and Maintenance Expenses resulting therefrom, that are not reflected in Net Revenues for such Fiscal Year, but only if such additional Revenues and changes in Operation and Maintenance Expenses represent a full twelve months' change in Net Revenues attributable to such additions, extensions and improvements; and

(II) An allowance for additional Revenues attributable to any increase in the rates and charges imposed by the SFPUC that (A) was in effect prior to the issuance of such Series of Bonds but which, during all or part of such Fiscal Year, was not in effect, or (B) was adopted by the SFPUC prior to the issuance of such Series of Bonds and will be in effect within 90 days after such issuance, but in either case only if such additional Revenues represent a full twelve (12) months' change in Net Revenues attributable to such increase in rates and charges.

Refunding Bonds may be issued by the SFPUC to provide funds sufficient for the payment of any or all of the following:

(1) The Principal, Purchase Price or Redemption Price of the Bonds or Original Bonds (as defined in the Indenture) to be refunded;

(2) All expenses incident to the purchase, call, redemption, retirement or payment of the Bonds or Original Bonds to be refunded;

(3) The costs of issuance of such Series of Refunding Bonds;

(4) Interest on the Bonds or Original Bonds to be refunded to the date such Bonds or Original Bonds will be purchased, redeemed, retired or paid;

(5) Interest on such Series of Refunding Bonds from the date thereof to the date of purchase, redemption, retirement or payment of the Bonds or Original Bonds to be refunded; and

(6) Any other lawful payment obligations, costs or expenses in connection with the issuance of the Refunding Bonds and the purchase, redemption, retirement or payment of the Bonds or Original Bonds to be refunded.

Refunding Bonds may be issued by the SFPUC only upon receipt by the Trustee of, among other things, the following:

(i) The documents specified in paragraphs (a) and (c) above under this subcaption "– *Indenture Requirements*"; and

(ii) Either (A) the document specified in paragraph (d) above under this subcaption "– *Indenture Requirements*", or (B) a Certificate of the SFPUC stating that the issuance of such Series of Refunding Bonds will not result in any aggregate increase in Annual Debt Service for the Bonds greater than $100,000 in any Fiscal Year that such Series of Refunding Bonds is scheduled to be Outstanding; and

(iii) An opinion of Bond Counsel that (A) all liability of the SFPUC in respect of the Bonds to be refunded has ceased, terminated and been discharged, pursuant to the terms of the Master Indenture and the Supplemental Trust Indenture pursuant to which such Bonds were issued, and the Owners of such Bonds are entitled to payment of the Principal, Purchase Price or Redemption Price of and interest on such Bonds only out of the money or securities deposited with the Trustee for the payment of such Bonds or (B) all liability of the SFPUC in respect of the Original Bonds to be refunded has ceased, terminated and been discharged, pursuant to the terms of the resolution or resolutions pursuant to which such Original Bonds were issued, and the owners of such Original Bonds are entitled to payment of the principal, purchase price or redemption price of and interest on such Original Bonds only out of the money or securities deposited with the trustee for the owners of such Original Bonds for the payment of such Original Bonds.

Certain Obligations Payable as Operations and Maintenance Expenses

The Indenture prohibits the SFPUC from entering into any Take-or-Pay Power Purchase Agreement payable from Revenues as an Operation and Maintenance Expense unless the SFPUC shall first deliver to the Trustee a Certificate of the SFPUC demonstrating compliance with the requirements set forth in paragraph (d) under "– Additional Series of Bonds – *Indenture Requirements*" for the first three full Fiscal Years following the Fiscal Year in which such Take-or-Pay Power Purchase Agreement will become effective.

The Indenture defines a "Take-or-Pay Power Purchase Agreement" as a contract (a) with a term of more than five years, (b) pursuant to which the SFPUC is obligated (i) to purchase capacity or energy from a generating facility, and (ii) to pay for such capacity or energy as an Operation and Maintenance Expense regardless of whether or not such capacity or energy is taken by or made available or delivered to the SFPUC, and (c) the payments pursuant to which are directly pledged and applied to pay and secure debt obligations issued to finance such generating facility.

Subordinate Obligations; Obligations Not Payable from Revenues

The Indenture permits the SFPUC to authorize and issue or incur, without limitation, bonds, notes, warrants, certificates or other obligations or evidences of indebtedness, the principal of or interest on which would be payable either (i) from Revenues, after payment of Operation and Maintenance Expenses and any Priority R&R Fund Deposits and after and subordinate to the payment from Revenues of the principal of and interest on the Bonds, or (ii) from moneys which are not Revenues. See "OBLIGATIONS PAYABLE FROM REVENUES – Subordinate Obligations."

Authorized Investments

The Indenture provides that moneys in all funds and accounts held by the Trustee under the Indenture shall be invested upon receipt in Authorized Investments as directed by the SFPUC. "Authorized Investments" means any obligations on investments in which the Treasurer may legally invest the SFPUC's funds. For information regarding the investment of moneys held in the various funds and accounts of the SFPUC, see "FINANCIAL OPERATIONS – Investment of SFPUC Funds."

OBLIGATIONS PAYABLE FROM REVENUES

Authority for Issuance of Revenue Bonds and Other Obligations Payable from Revenues

City Charter. The Charter authorizes the SFPUC to issue revenue bonds and commercial paper notes and other obligations payable from and secured by a pledge of Revenues. The Charter requires voter approval of revenue bonds issued by the SFPUC unless a specific exception to the voter approval requirement applies. See "*– Proposition A*," "*– Reconstruction or Replacement of Existing Facilities*," "*– Renewable Energy and Energy Conservation*" and "*– Refunding Bonds*" below. The 2023A Bonds are being issued pursuant to the authority granted by the specific exceptions to the voter approval requirement contained in such provisions of the Charter.

Proposition A. On June 5, 2018, voters of San Francisco approved Proposition A, amending Section 8B.124 of the Charter (enacted by Proposition E, approved by voters of San Francisco on November 5, 2002 ("**Proposition E**")) to authorize the issuance of revenue bonds, including notes, commercial paper or other forms of indebtedness, when authorized by ordinance approved by a two-thirds vote of the Board of Supervisors, for the purpose of reconstructing, replacing, expanding, repairing or improving water facilities, clean water facilities, power facilities or combinations of water, clean water and power facilities under the SFPUC's jurisdiction.

Reconstruction or Replacement of Existing Facilities. Section 9.107(6) of the Charter provides that no voter approval is required for bonds issued for the purpose of the reconstruction or replacement of existing water facilities or electric power facilities or combinations of water and electric power facilities under the jurisdiction of the SFPUC when authorized by resolution adopted by a three-fourths affirmative vote of all members of the Board of Supervisors.

Renewable Energy and Energy Conservation. Section 9.107(8) of the Charter provides that no voter approval is required for bonds issued to finance or refinance the acquisition, construction, installation, equipping, improvement or rehabilitation of equipment or facilities for renewable energy and energy conservation.

Refunding Bonds. Section 9.109 of the Charter authorizes the Board of Supervisors to provide for the issuance of bonds for the purpose of refunding revenue bonds without voter approval if the issuance and sale of such refunding bonds are expected to result in net debt service savings on a present value basis, calculated as provided by ordinance.

Ordinance No. 40-15. Ordinance No. 40-15 enacted the Public Utilities Commission Power Enterprise Revenue Bond Law. Ordinance 40-15 establishes procedures for the issuance of Power Enterprise revenue bonds and provides that "the City, including without limitation the [SFPUC], shall fix, establish, maintain, approve and collect rates and charges for electric power and energy and other services, facilities and commodities sold, furnished or supplied through the Power Enterprise, including on, for and from the City and its departments, agencies and commissions, to provide [Power Enterprise revenues] sufficient (a) to pay all costs and expenses of the Power Enterprise, including without limitation debt service on [Power Enterprise revenue bonds], (b) to provide appropriate reserves therefor, and (c) to satisfy the debt service coverage and other requirements under each [indenture providing for the issuance of Power Enterprise revenue bonds]" (bracketed language added).

Senior Obligations; Parity Obligations

The SFPUC has not issued or incurred any obligations (other than obligations constituting Operation and Maintenance Expenses) or issued or created additional indebtedness payable from Revenues senior to payment of the Bonds, including the 2023A Bonds.

The 2023A Bonds are the third Series of Bonds to be issued under the Master Indenture. The SFPUC has previously issued the 2015AB Bonds and the 2021AB Bonds. As of September 1, 2023, the Outstanding Bonds are outstanding in the aggregate principal amount of $158,910,000. There are currently no other obligations of the SFPUC payable from Revenues, after payment of Operation and Maintenance Expenses and any Priority R&R Fund Deposits, on a parity with the Outstanding Bonds and the 2023A Bonds.

Subordinate Obligations

The Power Enterprise has previously issued and incurred, and in the future may issue, bonds or notes or incur other obligations of the Power Enterprises secured by a pledge of and lien and charge on Revenues, after payment of Operation and Maintenance Expenses and any Priority R&R Fund Deposits, junior and inferior to the pledge, lien and charge securing repayment of the Bonds (the "**Subordinate Obligations**").

In October 2011, the SFPUC issued $8,291,000 aggregate principal amount of taxable qualified energy conservation bonds ("**QECBs**") to fund certain qualified components for the SFPUC's 525 Golden Gate Headquarters project. The QECBs mature in Fiscal Year 2027-28 and the annual debt service relating to the QECBs, net of anticipated federal subsidy payments to the SFPUC, is $591,198.

In October 2015, the SFPUC issued $4,100,000 aggregate principal amount of new clean renewable energy bonds ("**NCREBs**") to fund certain qualified clean, renewable energy solar generation facilities at the Marina Middle School and the San Francisco Police Academy. The NCREBs mature in Fiscal Year 2032-33 and the annual debt service relating to the NCREBs, net of anticipated federal subsidy payments to the SFPUC, on average, is $169,559.

The SFPUC has a commercial paper program to fund construction costs relating to Power Enterprise capital projects. The commercial paper program is authorized in the amount of $250 million for the SFPUC to issue commercial paper notes (the "**Commercial Paper Notes**"). The Commercial Paper Notes are secured by two separate letters of credit, each with Bank of America, N.A., each in the amount of $125 million and each with a stated expiration date of March 6, 2026. See "CERTAIN RISK FACTORS – Commercial Paper Note Credit Facilities." As of September 20, 2023, the SFPUC had approximately $117.7 million principal amount of and interest on Commercial Paper Notes outstanding. Approximately $117.7 million principal amount of and interest on Commercial Paper Notes will be refunded with proceeds of the 2023A Bonds on or around October 12, 2023.

The QECBs, NCREBs and the Commercial Paper Notes constitute Subordinate Obligations under the Indenture.

Contingent Payment Obligations

The Power Enterprise has no interest rate swaps, caps or hedges or other contingent payment obligations payable from Revenues. The Power Enterprise may in the future, however, incur contingent payment obligations payable from Revenues. Such contingent payment obligations may be payable on a parity with the Bonds if the conditions for the issuance of parity debt under the Indenture are satisfied. See "SECURITY FOR THE BONDS – No Senior Obligations; Other Parity Obligations."

Power Purchase Agreements

In June 2009, the Power Enterprise entered into a 25-year power purchase agreement with SFCity1, LP, to purchase electricity generated from a solar photovoltaic project located at Sunset Reservoir. The facility achieved commercial operation in November 2010. Duke Energy ("**Duke Energy**") has assumed ownership of the project and the obligations under power purchase agreement. In accordance with the terms and conditions thereof, Duke Energy will sell and deliver, and the Power Enterprise will purchase and accept, all of the output of the project (the "**Sunset Solar Generating Project**").

Payments made by the Power Enterprise under its agreement with Duke Energy constitute Operation and Maintenance Expenses under the Indenture. See "SECURITY FOR THE BONDS – Pledge of Revenues – *Net Revenues*." In Fiscal Years 2020-21 and 2021-22, the Power Enterprise purchased approximately 6,598 megawatt-hours ("**MWh**") of electricity for a total payment of $2.13 million and approximately 6,460 MWh of electricity for a total payment of $2.23 million, respectively. The SFPUC estimates purchasing approximately 6,607 MWh of electricity for a total payment of approximately $2.25 million in Fiscal Year 2022-23.

Other Obligations Payable from Revenues

The SFPUC completed the construction of a 13-story office building at 525 Golden Gate Avenue in San Francisco to house the administrative offices of the SFPUC's three utility enterprises, and moved into the building in July 2012. Total project costs were approximately $202 million and were financed with land and property sale proceeds, fund balances, grants and the proceeds of certificates of participation (the "**2009 Golden Gate COPs**"), representing interests in a City General Fund lease, executed and delivered in two series (one of which constitutes Build America Bonds) on October 7, 2009, in the aggregate principal amount of $167,670,000. The final maturity date of the 2009 Golden Gate COPs is November 1, 2041. As of September 1, 2023, the principal amount outstanding of the 2009 Golden Gate COPs was $129,550,000. Pursuant to a memorandum of understanding between the City and the SFPUC, the SFPUC reimburses the City General Fund for all debt service in connection with this City financing (net of Refundable Credits received). The SFPUC allocates such payment obligations internally among its three utility enterprises based on percentage usage. The Power Enterprise is responsible for 9.72% of such obligations, payable from Revenues on a basis subordinate to the payment of principal of and interest on the Bonds.

Revenue Bond Oversight Committee

On November 5, 2002, the voters of San Francisco adopted Proposition P, an ordinance that established the Public Utilities Revenue Bond Oversight Committee ("**RBOC**") to report publicly to the Mayor, the SFPUC and the Board of Supervisors regarding the expenditure of revenue bond proceeds on the repair, replacement, upgrading and expansion of the Wastewater Enterprise, the Water Enterprise and the Power Enterprise.

The RBOC has seven members appointed as follows: two by the Mayor, two by the Board of Supervisors, one by the City Controller, one by the Bay Area Water Users Association under the auspices of the Bay Area Water Supply and Conservation Agency. The seventh member is the City's Budget Analyst or their representative. Pursuant to Proposition P, the RBOC receives 1/20th of 1% of the gross new money revenue bond proceeds to fund the cost of retaining the services of outside auditors, inspectors, and necessary experts to perform independent reviews.

The provisions of the ordinance establishing the RBOC are set to expire on January 1, 2025.

The RBOC may, by majority vote of all its members, prohibit the issuance or sale of authorized SFPUC revenue bonds which have yet to be issued or sold if, after reviewing materials provided by the SFPUC and conducting its own independent audit, and after consultation with the City Attorney, the RBOC determines that revenue bond proceeds have been or are being spent on purposes not authorized by the authorizing bond resolution or otherwise in a manner amounting to an illegal expenditure or illegal waste of such revenue bond proceeds. The SFPUC may appeal such a decision to the Board of Supervisors within 30 days. The Board of Supervisors may overturn such a decision by the RBOC by a two-thirds vote of all members of the Board of Supervisors with evidence from the SFPUC of corrective measures satisfactory to the Board of Supervisors or may remand the decision to the RBOC for further consideration. To date, the RBOC has not prohibited the issuance or sale of any authorized SFPUC revenue bonds of the Wastewater Enterprise, the Water Enterprise or the Power Enterprise.

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Debt Service Requirements

Set forth below are the annual principal, interest and total debt service requirements for the Outstanding Bonds and the 2023A Bonds:

Fiscal Year Ending June 30	Outstanding Bonds[(1)(2)]	2023A Bonds Principal	2023A Bonds Interest[(2)]	Total Debt Service[(2)(3)]
2024	$ 2,566,350	--	--	$ 2,566,350
2025	9,615,750	--	--	9,615,750
2026	9,617,525	--	$3,097,625	12,715,150
2027	9,612,650	$1,075,000	6,168,375	16,856,025
2028	9,605,800	1,445,000	6,105,375	17,156,175
2029	9,606,050	1,820,000	6,023,750	17,449,800
2030	9,597,800	1,920,000	5,930,250	17,448,050
2031	9,604,975	2,015,000	5,831,875	17,451,850
2032	9,593,150	2,130,000	5,728,250	17,451,400
2033	9,592,375	2,325,000	5,616,875	17,534,250
2034	9,597,200	2,525,000	5,495,625	17,617,825
2035	9,598,675	2,655,000	5,366,125	17,619,800
2036	9,606,350	2,785,000	5,230,125	17,621,475
2037	9,614,675	2,915,000	5,087,625	17,617,300
2038	9,613,425	3,065,000	4,938,125	17,616,550
2039	9,617,275	3,220,000	4,781,000	17,618,275
2040	9,615,775	3,385,000	4,615,875	17,616,650
2041	9,618,475	3,560,000	4,442,250	17,620,725
2042	9,614,950	3,745,000	4,259,625	17,619,575
2043	9,614,725	3,935,000	4,067,625	17,617,350
2044	9,617,150	4,135,000	3,865,875	17,618,025
2045	9,616,700	4,350,000	3,653,750	17,620,450
2046	9,617,800	4,570,000	3,430,750	17,618,550
2047	9,618,000	4,805,000	3,196,375	17,619,375
2048	9,617,900	5,050,000	2,950,000	17,617,900
2049	9,615,000	5,315,000	2,690,875	17,620,875
2050	9,618,700	5,580,000	2,418,500	17,617,200
2051	9,618,400	5,870,000	2,132,250	17,620,650
2052	9,618,600	6,170,000	1,831,250	17,619,850
2053	--	16,350,000	1,268,250	17,618,250
2054	--	17,190,000	429,750	17,619,750
Total[(3)]	$271,682,200	$123,905,000	$120,654,000	$395,587,200

(1) Comprised of 2015AB Bonds and 2021AB Bonds. See "OBLIGATIONS PAYABLE FROM REVENUES."
(2) Net of capitalized interest payments.
(3) Totals may not add due to rounding.

THE CITY AND COUNTY OF SAN FRANCISCO

THE FOLLOWING INFORMATION IS PROVIDED FOR CONVENIENCE ONLY. THE GENERAL FUND OF THE CITY IS NOT LIABLE FOR THE PAYMENT OF THE PRINCIPAL OF, PREMIUM, IF ANY, OR INTEREST ON THE 2023A BONDS, AND NEITHER THE CREDIT NOR THE TAXING POWER OF THE CITY IS PLEDGED TO THE PAYMENT OF THE PRINCIPAL OF, PREMIUM, IF ANY, OR INTEREST ON THE 2023A BONDS. THE 2023A BONDS ARE NOT SECURED BY A LEGAL OR EQUITABLE PLEDGE OF, OR CHARGE, LIEN, OR ENCUMBRANCE UPON, ANY OF THE PROPERTY OF THE CITY.

General. San Francisco is the economic and cultural center of the San Francisco Bay Area and northern California. The limits of San Francisco encompass over 93 square miles, of which 49 square miles are land, with the balance consisting of tidelands and a portion of the San Francisco Bay (the "**Bay**"). San Francisco is located at the northern tip of the San Francisco Peninsula, bounded by the Pacific Ocean to the west, the Bay and the San Francisco-Oakland Bay Bridge to the east, the entrance to the Bay and the Golden Gate Bridge to the north, and San Mateo County to the south. Silicon Valley is about a 40-minute drive to the south, and the Napa-Sonoma wine country is about an hour's drive to the north. The City estimates San Francisco's population in fiscal year 2021-22 was 804,534.

The San Francisco Bay Area consists of the nine counties contiguous to the Bay: Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano and Sonoma Counties (collectively, the "**Bay Area**"). The economy of the Bay Area includes a wide range of industries, supplying local needs as well as the needs of national and international markets. Major business sectors in the Bay Area include technology, retail, entertainment and the arts, conventions and tourism, service businesses, banking, professional and financial services, corporate headquarters, international and wholesale trade, multimedia and advertising, healthcare and higher education. The California State Supreme Court is also based in San Francisco.

The COVID-19 pandemic materially adversely affected the City's population, finances and operations. Many aspects of the City's future finances and operations and the local economy have been and may continue to be materially adversely impacted by the COVID-19 pandemic. To date, City economic and tax revenue losses associated with the COVID-19 pandemic have been significant. While COVID-19 case rates have significantly declined, vaccination rates have increased, certain emergency orders have been lifted, and the national and local economy has been improving, the situation is still developing and the resulting impact on the City's local economy, population, finances and operations remains unknown.

San Francisco has historically been a major convention and tourist destination. However, the COVID-19 pandemic has significantly adversely impacted, and may continue to adversely impact tourism and convention activities in San Francisco. According to the San Francisco Travel Association, a nonprofit membership organization ("**SFTA**"), approximately 21.9 million tourists visited San Francisco in calendar year 2022, approximately 17.1 million tourists visited San Francisco in calendar year 2021, approximately 11.8 million tourists visited San Francisco in calendar year 2020 and approximately 26.3 million tourists visited San Francisco in calendar year 2019. SFTA also estimates that total spending, including spending from conventions, trade shows and group meetings, was $7.7 billion in calendar year 2022, $3.69 billion in calendar year 2021, $2.85 billion in calendar year 2020 and $10.29 billion in calendar year 2019.

San Francisco is also a leading center for financial activity in California. The headquarters of the Twelfth Federal Reserve District and the Eleventh District Federal Home Loan Bank are located in San Francisco.

San Francisco benefits from a highly skilled, educated and professional labor force. The City estimates the per-capita personal income of San Francisco for fiscal year 2021-22 was $170,483. The San Francisco Unified School District ("**SFUSD**"), which is a separate legal entity from the City, operates 66 elementary schools, six alternative configured schools, 13 middle schools, 14 high schools, 13 early education schools, three continuation/alternative schools and six county schools. Higher education institutions located in San Francisco include the University of San Francisco, California State University – San Francisco, University of California – San Francisco (a medical school and health science campus) ("**UCSF**"), UC College of the Law, San Francisco (formerly University of California Hastings College of the Law), the University of the Pacific's School of Dentistry, Golden Gate University, City College of San Francisco (a public community college), the San Francisco Conservatory of Music, and the Academy of Art University.

San Francisco International Airport ("**SFO**"), located 14 miles south of downtown San Francisco in an unincorporated area of San Mateo County, is owned by the City and is operated by the San Francisco Airport Commission (the "**Airport Commission**"), and is the principal commercial service airport for the Bay Area and one of the nation's principal gateways for Pacific Rim traffic. As discussed above, the COVID-19 pandemic has significantly adversely impacted tourism and travel in the San Francisco Bay Area. In fiscal year 2021-22, SFO served approximately 34.8 million passengers (compared to approximately 13.7 million passengers in fiscal year 2020-21, 40.5 million passengers in fiscal year 2019-20 and 57.4 million passengers in fiscal year 2018-19) and handled 545,335 metric tons of cargo (compared to 471,793 metric tons in fiscal year 2020-21, 490,073 metric tons in fiscal year 2019-20 and 564,485 metric tons in fiscal year 2018-19). San Francisco is also served by the Bay Area Rapid Transit District ("**BART**"), an electric rail commuter service linking San Francisco with the East Bay and the San Francisco Peninsula, including SFO), Caltrain (a conventional commuter rail line linking the City with the San Francisco Peninsula), and bus and ferry services between San Francisco and residential areas to the north, east and south of San Francisco. San Francisco Municipal Railway ("**Muni**"), operated by the San Francisco Municipal Transportation Agency ("**SFMTA**"), provides bus and streetcar service within San Francisco (although since fiscal year 2019-20, telecommuting resulting from emergency stay-at-home orders caused ridership into and within San Francisco to decline significantly compared to pre-pandemic levels). The Port of San Francisco (the "**Port**"), which administers 7.5 miles of Bay waterfront held in "public trust" by the Port on behalf of the people of California, promotes a balance of maritime-related commerce, fishing, recreational, industrial and commercial activities, and natural resource protection.

Government. San Francisco is a city and county chartered pursuant to Article XI, Sections 3, 4, 5 and 6 of the Constitution of the State of California and is the only consolidated city and county in California. Voters approved the City's current Charter at the November 1995 election. The City is governed by a Board of Supervisors elected from 11 districts to serve four-year terms, and a Mayor who serves as chief executive officer, elected citywide to a four-year term. The City's original budget for fiscal years 2022-23 and 2023-24 totals $14.0 billion and $13.9 billion, respectively. The General Fund portion of the original proposed budget is $6.8 billion in fiscal year 2022-23 and $6.9 billion in fiscal year 2023-24, with the balance allocated to all other funds, including enterprise fund departments, such as the Airport Commission, SFMTA, the Port Commission and the SFPUC. According to the City's Controller (the "**Controller**"), at the start of fiscal year 2022-23, total net assessed valuation of taxable property in San Francisco was approximately $328.6 billion.

City Financial Challenges. The COVID-19 pandemic resulted in general negative effects on the City's economy. In addition, the local, State and national economies have faced significant headwinds, including multiple interest rate increases by the Federal Reserve, continuing price inflation, volatile investment markets, and economic disruption resulting from the war in Ukraine and other factors. Furthermore, on August 1, 2023, the Controller issued its most recent report on the status of the San Francisco economy (the "**Controller's Report**"). The Controller's Report noted that the local labor market remains strong, with the San Francisco unemployment rate at 3.2%. However, the Controller's Report also notes that office vacancy increased in the second quarter of 2023, while rents, office attendance and downtown transit ridership remaining largely flat. Previous reports from the Controller in calendar year 2023 have also noted that housing prices are continuing to fall faster in San Francisco than Statewide.

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THE PUBLIC UTILITIES COMMISSION

General

The SFPUC is a department of the City responsible for the maintenance, operation and development of three utility enterprises: (i) the Water Enterprise, (ii) the Wastewater Enterprise and (iii) Hetch Hetchy Water and Power and CleanPowerSF. For financial purposes, the Hetch Hetchy Water and Power and CleanPowerSF enterprise is comprised of three funds: (i) Hetch Hetchy Water, (ii) the Power Enterprise and (iii) CleanPowerSF. See "INTRODUCTION – The San Francisco Public Utilities Commission and the Power Enterprise" for a chart showing the organizational structure of the SFPUC's enterprise funds.

The revenues of the Water Enterprise, the Wastewater Enterprise and CleanPowerSF, and the revenues allocated to Hetch Hetchy Water, as described under "– Organization, Purposes and Powers" below, are not available for payment of the principal of, premium, if any, or interest on the Bonds, including the 2023A Bonds. See "SECURITY FOR THE BONDS – Pledge of Revenues."

Organization, Purposes and Powers

The SFPUC has been established under and is governed by the provisions of the Charter, including the provisions respecting the priority of appropriations from enterprise revenues in Section 16.103 of the Charter.

Hetch Hetchy Water and Power. Hetch Hetchy Water and Power is comprised of two key components: Hetch Hetchy Water, which operates and maintains the Hetch Hetchy Project, and Hetch Hetchy Power (known and referred to in this Official Statement as the "Power Enterprise"), which is responsible for all SFPUC power utility commercial transactions and in-city power operations. The Hetch Hetchy Project provides water for distribution through the Water Enterprise and hydroelectric power for delivery through the Power Enterprise. A number of the facilities of the Hetch Hetchy Project are joint assets and are used for both water transmission and power generation and transmission, benefitting both Hetch Hetchy Water and the Power Enterprise. All publicly-owned utility power sales revenues are allocated to the Power Enterprise. Operating and capital costs benefitting the Power Enterprise and 55% of operating and capital costs that jointly benefit both Hetch Hetchy Water and the Power Enterprise are allocated to the Power Enterprise. See "THE POWER ENTERPRISE." Operating and capital costs benefitting Hetch Hetchy Water and 45% of operating and capital costs jointly benefitting both Hetch Hetchy Water and the Power Enterprise are allocated to the Water Enterprise.

The Power Enterprise was created in February 2005 as a separate system and accounting unit within Hetch Hetchy Water and Power. The Power Enterprise provides retail electric service to meet the municipal requirements of the City, including power to operate the SFMTA's streetcars and electric buses, Zuckerberg San Francisco General Hospital and Trauma Center, City Hall, police stations, fire stations and schools, certain Port facilities, street and traffic lights, municipal buildings and other City facilities, such as SFO, and to certain public agencies and retail customers and provides pedestrian and streetlight operation and maintenance services, energy efficiency, and distributed generation services to San Francisco residents and businesses and other customers. The Power Enterprise also operates and maintains the natural gas and electric utilities systems on Treasure Island/Yerba Buena Island pursuant to an agreement with TIDA. Additionally, the Power Enterprise is obligated to provide power to the Districts and to other customers consistent with prescribed contractual obligations and federal law. See "THE POWER ENTERPRISE."

CleanPowerSF. In May 2016, the SFPUC began serving customers through CleanPowerSF, a Community Choice Aggregation program. CleanPowerSF is a "Separate System" under the Indenture. Under CleanPowerSF, the SFPUC pools the electricity demands of many San Francisco residents and businesses that are retail electric distribution customers of PG&E, for the purpose of buying electricity on behalf of such customers. CleanPowerSF, which currently serves over 380,000 accounts, gives residential and commercial electricity consumers in San Francisco a choice of having their electricity supplied from clean renewable sources, such as solar, wind, and geothermal, at competitive rates. CleanPowerSF offers three products: the default "Green" product comprised of at least 50% California renewable portfolio standards ("**RPS**")-eligible renewable energy; the "SuperGreen" product comprised of 100% RPS-eligible renewable energy; and the "SuperGreen Saver" product comprised of 100% RPS-eligible renewable energy in which eligible low-income customers receive a 20% bill discount. CleanPowerSF is an opt-out program and customers can choose to use CleanPowerSF or stay with PG&E's existing generation service. Since the SFPUC began serving customers through CleanPowerSF, the program has maintained an approximately 96% participation rate, or an approximately 4% opt-out rate.

The revenues of CleanPowerSF are not "Revenues" under the Indenture, and are not available to pay and do not secure the payment of the principal of, premium, if any, or interest on the Bonds, including the 2023A Bonds. See "SECURITY FOR THE BONDS – Pledge of Revenues."

Water Enterprise. Approximately 2.7 million people rely on water supplied by the SFPUC to meet their daily water needs through its Water Enterprise. The SFPUC serves as the retail water supplier for San Francisco and is responsible for water deliveries to residents and institutions within the San Francisco city limits, as well as to a number of retail accounts outside of the San Francisco city limits. In addition, the SFPUC sells water to 26 wholesale customer entities in San Mateo, Alameda and Santa Clara counties pursuant to the Water Supply Agreement, which became effective in 2009 and was most recently amended and restated in 2021 (the "**Water Supply Agreement**") and individual contractual agreements, and one additional wholesale customer pursuant to an individual contractual agreement.

The revenues of the Water Enterprise are not "Revenues" under the Indenture, and are not available to pay and do not secure the payment of the principal of, premium, if any, or interest on the Bonds, including the 2023A Bonds. See "SECURITY FOR THE BONDS – Pledge of Revenues."

Wastewater Enterprise. The Wastewater Enterprise's collection and treatment system consists of a combined sewer collection system conveying sewage and stormwater flows within San Francisco to three water pollution control plants, also located within San Francisco. Treated effluent flows are then discharged through deep-water outfalls into the San Francisco Bay and Pacific Ocean. The Wastewater Enterprise also currently provides sewage treatment service on Treasure Island pursuant to contract and operates an onsite sewage and stormwater reclamation and treatment facility at the SFPUC headquarters at 525 Golden Gate Avenue.

The revenues of the Wastewater Enterprise are not "Revenues" under the Indenture, and are not available to pay and do not secure the payment of the principal of, premium, if any, or interest on the Bonds, including the 2023A Bonds. See "SECURITY FOR THE BONDS – Pledge of Revenues."

Commission Members

Under the Charter, the SFPUC is given exclusive charge of the operation and management of all water, wastewater and energy supplies and utilities owned or maintained by the City, as well as the real, personal and financial assets under the SFPUC's jurisdiction. The SFPUC is governed by the Commission.

The Commission consists of five members appointed by the Mayor, subject to confirmation by a majority of the Board of Supervisors. Seat 1 is designated for a member with experience in environmental policy and an understanding of environmental justice issues. Seat 2 is designated for a member with experience in ratepayer or consumer advocacy. Seat 3 is designated for a member with experience in project finance. Seat 4 is designated for a member with expertise in water systems, power systems, or public utility management. Seat 5 is designated for an at-large member. Members are appointed for four-year terms and are eligible for reappointment. Members may be suspended by the Mayor and may be removed by a three-fourths vote of the Board of Supervisors for official misconduct.

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The current members of the Commission and their appointment dates and expiration dates of their current terms are set forth below:

Name and Title	Seat	Appointment Date	Term Expires
Newsha Ajami, President	1	February 4, 2021	August 1, 2024
Sophie Maxwell, Vice President	2	April 29, 2019	August 1, 2025
Tim Paulson	3	April 29, 2019	August 1, 2024
Anthony Rivera	5	October 11, 2022	August 1, 2024
Kate H. Stacy	4	October 18, 2022	August 1, 2026

Management

Management of the SFPUC is led by the General Manager. The General Manager is appointed by the Mayor from candidates submitted by the Commission. Once appointed by the Mayor, the General Manager serves at the pleasure of the Commission; however, the Commission also has Charter authority to employ the General Manager under an individual contract.

Brief biographies of the General Manager and principal members of the senior management of the SFPUC are set forth below.

Dennis J. Herrera. Dennis J. Herrera commenced serving as the General Manager of the SFPUC on November 1, 2021. Prior to his appointment, Mr. Herrera had been re-elected in November 2019 to a four-year term as City Attorney for the City and County of San Francisco. Mr. Herrera was first elected City Attorney in December 2001. Before becoming City Attorney, Mr. Herrera had been a partner in a private law firm and had served in the Clinton Administration as Chief of Staff of the United States Maritime Administration. He also served as president of the San Francisco Police Commission and was a member of the San Francisco Public Transportation Commission. Mr. Herrera earned a B.A. from Villanova University and a J.D. from George Washington School of Law.

Ronald P. Flynn. Ronald P. Flynn is the Deputy General Manager and Chief Operating Officer of the SFPUC. Appointed to this role in 2022, Mr. Flynn works with the General Manager on all policy and strategic initiatives, oversees the SFPUC's daily operations, including business services (finance, accounting, audits, customer services, information technology), external affairs (communications, legislative, community benefits, equity), and human resources. Prior to this position, Mr. Flynn served for almost 16 years in the San Francisco City Attorney's Office under Dennis Herrera. For the last seven years he was the Chief Deputy City Attorney, where he oversaw the City's litigation teams, as well as worked closely with departments and agencies, including the SFPUC, on procurement, financial, and litigation matters. He worked on Hetch Hetchy litigation, PG&E's bankruptcy, and other SFPUC-related issues. Mr. Flynn previously served as Team Leader of the Construction and Public Contracting Team in the City Attorney's Office, working on many SFPUC projects, including the Water System Improvement Program. Mr. Flynn earned a B.Sc. from California Polytechnic State University, San Luis Obispo, an Ed.M from Harvard University, and a J.D. from University of California, Berkeley School of Law.

Nancy L. Hom. Nancy L. Hom is the Chief Financial Officer and Assistant General Manager for Business Services, providing direction and oversight for the Financial Services, Audit, Loans and Grants, Information Technology Services, Customer Services, and Strategy Innovation and Change bureaus. She has led several important bureaus of Business Services, including serving as the Assurance and Internal Control Director for 10 years; and more recently as the SFPUC's Co-Deputy Chief Financial Officer. Ms. Hom has nearly 20 years of experience leading financial and governance teams in public agencies and has extensive knowledge of the City's financial and accounting guidelines and systems, capital improvement projects and regulatory affairs. Prior to joining the SFPUC, she served as the Chief Financial Officer for the Department of Child Support Services and as a leader in the Office of the Controller's Budget and Analysis division. Ms. Hom earned her bachelor's degree in Business Administration from San Francisco State University, concentrating in Finance, Internal Audit, and Project Management. She also maintains two professional certifications from the Institute of Internal Auditors as a Certified Internal Auditor and Certified Risk Management Assurance professional.

Barbara Hale. Barbara Hale is Assistant General Manager for Power. Ms. Hale oversees the Power Enterprise, where she is responsible for all commercial arrangements associated with the purchase and sale of power, whether wholesale or retail, and operations of retail electric service programs. Prior to this role, Ms. Hale served as Analyst, Advisor to the President, Administrative Law Judge, and Division Director at the California Public Utilities Commission. Ms. Hale graduated cum laude from San Francisco State University with a B.A. in Economics, receiving special recognition for high achievement with the Department Honors Award, and pursued extensive graduate coursework in Applied Economics.

Masood Ordikhani. Masood Ordikhani serves as the Assistant General Manager, External Affairs for the SFPUC. Previously, he served as the SFPUC's first Chief Equity and Innovation Officer, leading the agency's racial equity work. Prior to that role, he was the Director of Workforce and Economic Program Services within the SFPUC's Infrastructure Division. During his tenure in that role, Mr. Ordikhani and his team have developed and delivered several nationally recognized programs. Prior to joining the SFPUC, Mr. Ordikhani was the Deputy Director of the City's Human Rights Commission. In addition, prior to his more than 14 years of public service, he was an attorney in private practice. He is a graduate of the University of California, Berkeley and UC College of the Law, San Francisco (formerly University of California Hastings College of the Law).

Stephen Robinson. Stephen Robinson is the Assistant General Manager for Infrastructure, where he is responsible for capital programs and project implementation for SFPUC facilities, including the Water System Improvement Program, the Sewer System Improvement Program, and the Hetchy Capital Improvement Program. Previously, he was the Director of the Wastewater Enterprise Capital Program for SFPUC's Infrastructure Division. He is a Professional Civil Engineer and a UK Chartered Civil Engineer with over two decades of planning, design, construction, and management experience in the water/wastewater sector. Prior to joining SFPUC, Mr. Robinson worked with MWH/Stantec as a consultant and served in the British Army as a Royal Engineer Captain. Mr. Robinson has a master's degree in Civil Engineering and Management from the Queens University of Belfast, Northern Ireland.

Joel Prather. Joel Prather is the Acting Assistant General Manager of the Wastewater Enterprise. His professional background includes more than a decade at the SFPUC's Wastewater Enterprise, and over 20 years with the City. He started with San Francisco Public Works in the Bureau of Street and Sewer Repair and came to the SFPUC in 2011 as a Maintenance Planner. He held the position of Maintenance Manager for the past seven years, where he managed the day to day maintenance systems and practices for the wastewater treatment facilities. He earned a B.A. in urban studies from San Francisco State University.

Steven R. Ritchie. Steven Ritchie is the Assistant General Manager of the Water Enterprise, responsible for overseeing water system operations and planning from the Hetch Hetchy Project through the Regional Water System to the City Distribution Division. He is also responsible for the management of the SFPUC's lands and natural resources. Mr. Ritchie was the Manager of Planning at the SFPUC from 1995 to 1998. Prior to his current assignment, he managed the South Bay Salt Pond Restoration Project, a multi-agency effort to restore 15,100 acres of valuable habitat in South San Francisco Bay, while providing for flood risk management and public access. In addition, Mr. Ritchie has worked at management positions at the San Francisco Bay Regional Water Quality Control Board (1987-1995), the CalFed Bay Delta Program (1998-2000), and URS consultants (2000-2004). He has a B.S. and M.S. in Civil Engineering from Stanford University.

Ongoing Investigations

In January 2020, the City's former Director of Public Works, Mohammad Nuru, was criminally charged with public corruption, including honest services wire fraud and lying to Federal Bureau of Investigation ("**FBI**") agents. In February 2020, then-City Attorney Dennis Herrera and Controller Ben Rosenfield announced the initiation of a joint investigation stemming from the federal criminal charges against Mr. Nuru. The City Attorney's Office focused on holding public officials and City vendors accountable. The Controller undertook a public integrity review of contracts, purchase orders, and grants to the City.

Mr. Nuru resigned from employment with the City in February 2020. In January 2022, Mr. Nuru pled guilty to taking bribes from contractors, developers, and entities he regulated, including bribes from Walter Wong, a San Francisco construction company executive and permit expediting consultant, who ran or controlled multiple entities doing business with the City. In August 2022, the district court judge sentenced Mr. Nuru to 84 months in prison.

Mr. Wong was criminally charged in June 2020 with conspiring with City officials and laundering money. As part of the criminal investigation into Mr. Nuru and Mr. Wong, the SFPUC received a federal, criminal, grand jury subpoena in June 2020 to produce documents, communications, contracts and records, including the complete personnel file of the SFPUC's former General Manager, Harlan L. Kelly, Jr.

In November 2020, Mr. Kelly was charged in a criminal complaint with one count of honest services wire fraud. The complaint alleged that Mr. Kelly also engaged in a long-running bribery scheme and corrupt partnership with Mr. Wong. The complaint further alleged that as part of the scheme, Mr. Wong provided items of value to Mr. Kelly in exchange for official acts by Mr. Kelly that benefited or attempted to benefit Mr. Wong's business ventures. According to the criminal complaint against Mr. Kelly, Mr. Wong bribed Mr. Kelly with thousands of dollars in airfare, meals, jewelry, and travel expenses, as well as by making improvements to Mr. Kelly's home.

Mr. Wong pled guilty in July 2020 and continues to cooperate with the ongoing federal criminal investigation. Mr. Wong has not been sentenced.

Mr. Wong settled civilly with the City in May 2021. As part of his civil settlement, he and his companies agreed to pay the City more than $300,000 in ethics fines and more than $1 million in restitution. The total restitution amount to the City includes $73,000 that he received through the SFPUC when Mr. Kelly was General Manager.

Mr. Kelly resigned from employment with the City, effective November 30, 2020. Michael Carlin, former-Deputy General Manager of the SFPUC, then served as the Acting General Manager of the SFPUC through October 31, 2021. Mr. Herrera began serving as General Manager of the SFPUC on November 1, 2021.

Since Mr. Nuru's arrest in January 2020, the Controller's Office, in consultation with the City Attorney, has issued 11 public integrity reviews. Ten of the 11 reports focus primarily on City departments other than the SFPUC. The Controller's Office's December 9, 2021 Public Integrity Audit looked specifically at SFPUC's Social Impact Partnership Program and made seven recommendations to strengthen internal controls and oversight. The SFPUC concurred with all seven of those recommendations, and as of September 2023, five of the seven recommendations had been implemented and two were in progress.

In October 2021, a criminal grand jury returned an indictment against Mr. Kelly and Victor Makras, a San Francisco real estate broker and property developer. Mr. Makras formerly served on several City boards and commissions, including the Port Commission, Police Commission, Public Utilities Commission, and Retirement Board. In addition to the original charges against Mr. Kelly of conspiracy with Mr. Wong, the indictment added charges of bank fraud and bank fraud conspiracy related to a $1.3 million loan Mr. Kelly obtained from Quicken Loans.

Mr. Makras' case was severed from Mr. Kelly's, and in August 2022, a jury convicted Mr. Makras of bank fraud for his role in making false statements to the bank in support of the loan to Mr. Kelly. In December 2022, Mr. Makras was sentenced to three years of probation and fined $15,200.

On July 14, 2023, Mr. Kelly was convicted of one count of conspiracy to commit honest services wire fraud, one count of honest services wire fraud, and four counts related to charges stemming from a bank fraud scheme. The jury found Mr. Kelly not guilty of two honest services wire fraud counts. No sentence has been pronounced for Mr. Kelly.

On August 29, 2023, the San Francisco District Attorney charged Lanita Henriquez, who served as the director of the San Francisco Community Challenge Grant Program under the Office of the San Francisco City Administrator, and Rudolph Dwayne Jones, a former City official who occasionally served as a prime contractor and a subcontractor to the SFPUC, with counts of misappropriation of public monies, bribery, and financial conflict of interest in a government contract. It is alleged that Ms. Henriquez and Mr. Jones misappropriated public money between 2016 and 2020, that Mr. Jones wrote Ms. Henriquez multiple checks in 2017 and 2018 totaling $25,000, while Ms. Henriquez directed government grant contracts exceeding $1.4 million to entities controlled by Mr. Jones, in which entities Ms. Henriquez also had a financial stake, between 2016 and 2020.

The San Francisco District Attorney has not alleged any impropriety in connection with the sole grant program Ms. Henriquez administered for the SFPUC and the SFPUC has confirmed that there are no active direct contracts between the SFPUC and Mr. Jones or his affiliated entities. The SFPUC has, however, identified four subcontracts between Mr. Jones or his affiliated entities and other SFPUC prime contractors that were effective on the date that Mr. Jones was charged. On September 8, 2023, the SFPUC directed each of the four prime contractors retaining Mr. Jones and/or RDJ Enterprises, LLC, an entity affiliated with Mr. Jones (collectively, "**RDJ**"), to terminate or cancel any subcontract, service order, or other contractual arrangement with RDJ.

The FBI investigation is ongoing, and the City can give no assurance when the FBI will complete its investigation. The San Francisco District Attorney's Office Public Integrity Task Force has also independently investigated certain of the matters described here, and the City can give no assurance when this task force will complete its investigation.

Proposed Transaction with Pacific Gas & Electric Company

In September 2019, in connection with the bankruptcy of PG&E and PG&E Corporation, the City submitted a non-binding indication of interest to PG&E and PG&E Corporation to purchase substantially all of PG&E's electric distribution and transmission assets needed to provide retail electric service to all electricity customers within the geographic boundaries of San Francisco (collectively, the "**Targeted Assets**") for a purchase price of $2.5 billion. PG&E emerged from bankruptcy on July 1, 2020. The City subsequently submitted additional non-binding indications of interest to PG&E in September 2020 and May 2023. PG&E has not indicated a willingness to sell any such assets. The City remains interested in acquiring these assets from PG&E and, in July 2021, submitted a petition to the CPUC for a formal determination of the fair market value of PG&E's assets the City is interested in acquiring. In April 2023, the City filed direct testimony of four expert witnesses with the CPUC regarding the specific assets under consideration for acquisition and the value of such assets. In June 2023, the City initiated preparation of an environmental impact report in compliance with the California Environmental Quality Act ("**CEQA**"). A transaction has not been consummated with PG&E, and neither the SFPUC nor the City are able to predict whether a transaction will be consummated or what the terms of any such transaction would be, if consummated.

In the event the City purchases or otherwise acquires all or a substantial portion of the electric distribution and transmission assets of PG&E needed to provide retail electric service to all electricity customers within the geographic boundaries of the City, the Indenture requires that the SFPUC either operate such service as a Separate System or provide for all then Outstanding Bonds to be defeased or retired pursuant to applicable provisions of the Indenture in connection with such purchase or acquisition. In the Third Supplemental Indenture, the SFPUC covenants that it will not elect to operate such service as a Separate System unless the SFPUC has determined that such operation will not have a material adverse effect on the holders of, or the security pledged for the payment of, the Bonds.

Employee Relations

San Francisco. The City's budget for fiscal years 2022-23 and 2023-24 included approximately 39,813 and 40,028 full-time and part-time budgeted and funded City positions, respectively. City workers are represented by 36 different labor unions. The largest unions in the City include the Service Employees International Union, Local 1021 ("**SEIU**") and the International Federation of Professional and Technical Engineers, Local 21 ("**IFPTE**"), which represent Power Enterprise employees.

Wages, hours and working conditions of City employees, including employees of the SFPUC, are determined by collective bargaining pursuant to State law (the Meyers-Milias-Brown Act, California Government Code Sections 3500-3511) and the City Charter. San Francisco is unusual among California's cities and counties in that nearly all of its employees, including managerial and executive-level employees, are represented by labor organizations.

Further, the City Charter requires binding arbitration to resolve negotiations in the event of impasse. If impasse occurs, the parties are required to convene a tripartite arbitration panel, chaired by an impartial third-party arbitrator, which sets the disputed terms of the new agreement. The award of the arbitration panel is final and binding. This process applies to almost all City employees. Since 1976, no City employees have participated in a union-authorized strike, which is prohibited by the City Charter. On July 24, 2023, the California Public Employment Relations Board ("**PERB**") ruled in favor of the SEIU and IFPTE, concluding that City Charter sections A8.346 and A8.409 prohibiting strikes by City employees are invalid, affirming an earlier ruling of an administrative law judge that such City Charter provisions violate the Meyers-Milias-Brown Act. The City has filed a notice of appeal to the California Court of Appeal with respect to the PERB decision. The City can give no assurance whether the appeal will be successful. See "CERTAIN RISK FACTORS – Risks Related to Power Enterprise Operations and Facilities – *Labor Actions*."

The City's employee selection procedures are established and maintained through a civil service system. In general, selection procedures and other merit system issues, with the exception of discipline, are not subject to arbitration. Disciplinary actions are generally subject to grievance arbitration, with the exception of sworn police officers and fire fighters.

In May 2019, the City negotiated three-year agreements (for fiscal years 2019-20 through 2021-22) with 27 labor unions, including IFPTE, which represents Power Enterprise employees. For fiscal year 2019-20, the parties agreed to wage increases of 3% on July 1, 2019 and 1% on December 28, 2019. For fiscal year 2020-21, the parties agreed to a wage increase schedule of 3% on July 1, 2020 and 0.5% on December 26, 2020, with a provision to delay the fiscal year 2020-21 adjustment by six months if the City's deficit for fiscal year 2020-21, as projected in the March 2020 update to the five-year financial plan, exceeded $200 million. Because the March 2020 update to the five-year financial plan projected a deficit for fiscal year 2020-21 in excess of $200 million, the scheduled wage increases as described above were delayed by approximately six months. For fiscal year 2021-22, the parties agreed to a wage increase schedule of 3% on July 1, 2021 and 0.5% on January 8, 2022, with a provision to delay the fiscal year 2021-22 increase by six months if the City's deficit for fiscal year 2021-22, as projected in the March 2021 update to the five-year financial plan, exceeded $200 million. The scheduled July 1, 2021 wage increase was implemented as the March 2021 update to the five-year financial plan did not project a $200 million deficit.

In May 2022, the City negotiated two-year agreements (for fiscal years 2022-23 and 2023-24) with 27 labor unions, including IFPTE, which represents Power Enterprise employees. For fiscal year 2022-23, the parties agreed to a wage increase of 5.25% on July 1, 2022. For fiscal year 2023-24, the parties agreed to wage increases of 2.5% on July 1, 2023, and 2.25% on January 6, 2024, with a provision to delay the fiscal year 2023-24 adjustment by six months if the City's deficit for fiscal year 2023-24, as projected in the March 2023 update to the five-year financial plan, exceeded $300 million. The scheduled July 1, 2023 wage increase was implemented as the March 2023 update to the five-year financial plan did not project a $300 million deficit.

SFPUC. The SFPUC currently employs approximately 2,300 of the City's workers, of which approximately 6.8% work for the Power Enterprise. The Charter governs the SFPUC's employment policies and authorizes the San Francisco Civil Service Commission to establish rules and procedures to implement those policies. Of the 36 labor unions representing City workers more broadly, 14 presently represent SFPUC employees.

Over the next five years, approximately 41.6% of the SFPUC workforce agency-wide will be eligible for retirement. A new generation of jobs will require workers with specialized training, skills and experience, while local hiring requirements will need to be observed. The SFPUC's 2020 Strategic Sustainability Plan includes an "effective workforce" goal, which focuses on a number of workforce development and sustainability initiatives. In addition, one of the strategies set forth in the City's Climate Action Plan (as defined and further described herein) with respect to energy supply sector goals is to develop workforce capacity to deliver clean energy resources (see "POWER ENTERPRISE CAPITAL PROGRAM – Climate Action Plan"). The SFPUC also provides ethics training, diversity training, management training, environmental management system training, as well as fraud prevention and awareness training. See also "CERTAIN RISK FACTORS – Risks Related to Power Enterprise Operations and Facilities – *Skilled Labor*."

The following table summarizes the number of Power Enterprise employees covered by a memorandum of understanding (similar to a collective bargaining agreement), each of which expire on June 30, 2024.

TABLE 1
POWER ENTERPRISE
MEMORANDA OF UNDERSTANDING

Employee Bargaining Unit	Full-Time Equivalent Employment(1)
Electrical Workers, Local 6	36
International Federation of Professional and Technical Engineers, Local 21	76
Municipal Executives' Association	19
SEIU Local 1021	10
Stationary Engineers, Local 39	1
Unrepresented Employees(2)	4
Total:	146

(1) Represents budgeted numbers as of July 1, 2023. Actual full-time equivalent employment totals will differ from the number of positions budgeted by the SFPUC for a variety of reasons, including certain requirements in the respective memoranda of understanding. See "FINANCIAL OPERATIONS – General – City Budget Process."
(2) Not covered by a memorandum of understanding.
Source: SFPUC, Human Resources Services.

Employee Benefit Plans

Retirement System Plan Description. The San Francisco City and County Employees' Retirement System (the "**Retirement System**" or "**SFERS**") is charged with administering a defined-benefit pension plan (the "**Plan**") that covers substantially all City employees, including SFPUC employees, and certain other employees. The Retirement System was initially established by approval of City voters on November 2, 1920, and the State Legislature on January 12, 1921, and is currently codified in the Charter. The Charter provisions governing the Retirement System may be revised only by a Charter amendment, which requires an affirmative public vote at a duly called election. The Retirement System is administered by the Retirement Board (the "**Retirement Board**"). The Plan provides basic service retirement, disability and death benefits based on specified percentages of final average salary and provides cost-of-living adjustments after retirement. The Plan also provides pension continuation benefits to qualified survivors.

Funding Practices. Employer and employee (member) contributions are mandated by the Charter. Sponsoring employers, including the SFPUC, are required to contribute 100% of the actuarially determined contribution approved by the Retirement Board. The Charter specifies that employer contributions consist of the normal cost (the present value of the benefits that SFERS expects to become payable in the future attributable to a current year's employment) plus an amortization of the unfunded liability over a period not to exceed 20 years. The Retirement Board sets the funding policy subject to the Charter requirements.

The Retirement Board adopts the economic and demographic assumptions used in the annual valuations. Demographic assumptions such as retirement, termination and disability rates are based upon periodic demographic studies performed by a consulting actuarial firm approximately every five years. Economic assumptions are reviewed each year by the Retirement Board after receiving an economic experience analysis from the consulting actuarial firm.

At the December 9, 2020, Retirement Board meeting, the Retirement Board adopted all recommended demographic assumptions from the experience study dated August 12, 2020, including, among others, updates to public plan mortality tables, lower price and wage inflation rates, from 2.75% to 2.50% and from 3.50% to 3.25%, respectively, effective for the July 1, 2020 actuarial valuation. At the November 10, 2021, Retirement Board meeting, the Retirement Board lowered the assumed long-term investment earnings assumption from 7.40% to

7.20%, effective for the July 1, 2021, actuarial valuation. At the November 17, 2022, Retirement Board meeting, the Retirement Board voted to maintain the actuarial assumptions at their current levels. The Retirement Board is expected to review economic and demographic assumptions next in November 2023.

While employee contribution rates are mandated by the Charter, sources of payment of employee contributions may be the subject of collective bargaining agreements with each union or bargaining unit. Since July 1, 2011, substantially all employee groups have agreed through collective bargaining for employees to contribute all employee contributions through pre-tax payroll deductions.

The following table shows total Retirement System liabilities, assets and percent funded for the last five actuarial valuations, as well as contributions for the fiscal years 2017-18 through 2021-22.

TABLE 2
CITY AND COUNTY OF SAN FRANCISCO
EMPLOYEES' RETIREMENT SYSTEM
FISCAL YEARS 2017-18 THROUGH 2021-22
(IN THOUSANDS)

As of July 1st	Actuarial Liability	Market Value of Assets	Actuarial Value of Assets	Market Percent Funded	Actuarial Percent Funded	Employee and Employer Contribution in Prior Fiscal Year	Employer Contribution Rates in Prior Fiscal Year[1]
2018	$27,335,417	$24,557,966	$23,866,028	89.8%	87.3%	$ 983,763	23.46%
2019	28,798,581	26,078,649	25,247,549	90.6	87.7	1,026,036	23.31
2020	29,499,918	26,620,218	26,695,844	90.2	90.5	1,143,634	25.19
2021	31,905,275	35,673,834	30,043,222	111.8	94.2	1,245,957	26.90
2022	33,591,565	32,798,524	32,275,474	97.6	96.1	1,191,934	24.41

[1] Employer contribution rates are shown before required employer/employee cost-sharing provisions. Employer contribution rates for fiscal years 2022-23 and 2023-24 are 21.35% and 18.24%, respectively.

Source: SFERS' audited year-end financial statements and required supplemental information. SFERS' annual Actuarial Valuation Report dated July 1st.

Note: Information above reflects entire Retirement System, which covers substantially all City employees, including SFPUC employees, and certain other employees.

The City's net pension asset was approximately $2.4 billion for Fiscal Year 2021-22. The amount allocable to the Power Enterprise, as of June 30, 2022, was approximately $17 million.

The SFPUC is required to contribute at an actuarially determined rate and allocates the applicable portions of such contribution to the separate enterprises, including the Power Enterprise. For Fiscal Years 2017-18 through 2021-22, the SFPUC's employee contribution rates varied from 7.5% to 13.0% as a percentage of gross covered salary. For Fiscal Years 2017-18 through 2021-22, the Power Enterprise has paid 100% of its required contributions. The contributions by the Power Enterprise required for Fiscal Years 2017-18 through 2021-22 are summarized in the following table:

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TABLE 3
POWER ENTERPRISE RETIREMENT SYSTEM CONTRIBUTION
FISCAL YEARS 2017-18 THROUGH 2021-22
(IN THOUSANDS)

Fiscal Year (Measurement Period)	Employer Contribution Rates	Power Enterprise Contribution
2017-18	23.5%	$3,822
2018-19	23.3	3,756
2019-20	25.2	4,369
2020-21	26.9	5,048
2021-22	24.4	5,071

Source: SFERS Actuarial Valuation reports as of July 1, 2019, July 1, 2020, July 1, 2021 and July 1, 2022, and SFPUC audited financial statements.

Plan Financial Reports and Funded Status. The Retirement System issues a publicly available financial report that includes financial statements and required supplementary information for the Plan. That report may be obtained by writing to the San Francisco City and County Employees' Retirement System, 1145 Market Street, 5th Floor, San Francisco, CA 94103, or by calling (415) 487-7000.

Health Care Benefits. The SFPUC participates in the City's agent multiple employer defined benefit plan, which operates as a cost-sharing multiple employer defined benefit plan for the SFPUC (the "**OPEB Plan**"). The OPEB Plan is maintained by the City and is administered through the City's Health Service System and provides postemployment medical, dental and vision insurance benefits to eligible employees, retired employees, and surviving spouses. Health benefit provisions are established and may be amended through negotiations between the City and the respective bargaining units. The City does not issue a separate report on its other post-employment benefit plan.

As prescribed under Governmental Accounting Standards Board ("**GASB**") Statement No. 75, Accounting and Financial Reporting for Postemployment Benefits Other than Pensions, net OPEB liability, deferred outflows/inflows of resources related to OPEB, and OPEB expense are actuarially determined on a citywide basis. Net OPEB liability is measured as the portion of the present value of projected benefit payments to be provided to current active and inactive employees attributed to those employees' past service, less the amount of the Retiree Healthcare Trust Fund investments measured at fair value.

The provisions of GASB Statement No. 75 are effective for the Power Enterprise beginning in Fiscal Year 2017-18. The following table shows the components of the City's annual OPEB allocations for the Power Enterprise for Fiscal Years 2019-20 through 2021-22, for the amount contributed to the OPEB Plan, and changes in the City's net OPEB obligation:

TABLE 4
ANNUAL OPEB OBLIGATION
FOR FISCAL YEARS 2019-20 TO 2021-22
(IN THOUSANDS)

	2019-20	2020-21	2021-22
City's reported net OPEB liabilities	$3,915,815	$3,823,334	$3,691,122
Power Enterprise's proportionate share of City's contribution	1,204	1,136	1,192
Power Enterprise's proportionate share of City's OPEB liability	19,983	17,653	17,405

Source: SFPUC.

The City's OPEB net position liability was approximately $3.7 billion for Fiscal Year 2021-22. The amount allocable to the Power Enterprise, as of June 30, 2022, was approximately $17 million.

The City issues a publicly available financial report on a City-wide level that includes the complete note disclosures and required supplementary information related to the City's post-retirement health care obligations. The report may be obtained by writing to the City and County of San Francisco, Office of the Controller, 1 Dr. Carlton B. Goodlett Place, Room 316, San Francisco, CA 94102, or by calling (415) 554-7500.

Pension and Health Care Cost Reforms. Voters implemented City employee pension and health care cost reforms to help mitigate future cost increases. These include the following propositions:

Proposition B. Proposition B was a Charter amendment approved by voters in June 2008 that increased the years of service required to qualify for employer-funded retiree health benefits for City employees who retire under SFERS and were hired on or after January 10, 2009. Previously, employees became eligible to participate in the retirement health care system after five years of service and the employer paid 100% of the contribution. Beginning with employees hired on or after January 10, 2009, employees remain eligible to participate in the retirement health care system after five years of service, however, no employer contributions are required until 10 years of service. From 10 to 15 years of service, employers pay 50% of the contribution, from 15 to 20 years of service 75%, and for employees with 20 years or more of service, 100%.

Proposition B also established a health care trust fund to pay for future costs related to retiree health care. Employees hired on or after January 10, 2009, contribute up to 2% of their pre-tax pay, with employers contributing an additional 1%, to the health care trust fund. Proposition B also increased maximum pension benefits for employees retiring at and after age 60 and enhances cost of living increases for pensions.

Proposition C. Proposition C was a Charter amendment approved by voters in November 2011 that changed the way the City and current and future employees share in funding SFERS pension and health benefits.

With regard to pension benefits, the base employee contribution rate remains at 7.5% for most employees when the City contribution rate is between 11% and 12% of City payroll. Employees making at least $50,000 will pay an additional amount up to 6% of compensation when the City contribution rate is over 12% of City payroll. When the City contribution rate falls below 11%, employee contributions will be decreased proportionately.

Proposition C creates new retirement plans for employees hired on or after January 7, 2012 that: (1) for miscellaneous employees, increased the minimum retirement age to 53 with 20 years of service or 60 with 10 years; (2) for safety employees, kept the minimum retirement age at 50 with five years of service, but increased the age for maximum benefits to 58; (3) for all employees, limited covered compensation, calculated final compensation from a three year average, and changed the multipliers used to calculate pension benefits; and (4) for miscellaneous employees, raised the age of eligibility to receive vesting allowance to 53 and reduced by half the City's contribution to vesting allowances.

With regard to health benefits, elected officials and employees hired on or before January 9, 2009, contribute up to 1% of compensation toward their retiree health care, with matching contribution by the City. For employees or elected officials who left the City workforce before June 30, 2001, and retire after January 6, 2012, Proposition C requires that the City contributions toward retiree health benefits remain at the same levels they were when the employee left the City workforce.

Proposition C also limits cost of living adjustments ("**COLA**") for SFERS retirees; however, in 2015, the Court of Appeals held in a suit against the City brought by a retiree organization, *Protect Our Benefits v. City and County of San Francisco*, 235 Cal. App. 4th 619 (2015) that certain changes to payment of supplemental cost of living allowances imposed by Proposition C could not be applied to current City employees and those who retired after November 1996 when the supplemental cost of living allowance provisions were originally adopted, but could be applied to SFERS members who retired before November 1996. This decision is now final and its implementation increased the July 1, 2016 unfunded actuarial liability by $429.3 million for Supplemental COLAs granted retroactive to July 1, 2013 and July 1, 2014.

On July 13, 2016, the Retirement Board adopted a resolution to exempt members who retired before November 6, 1996, from the "fully funded" provision related to payment of Supplemental COLAs under Proposition C. The resolution directed that retroactive payments for Supplemental COLAs be made to these retirees. After the Retirement Board adopted said resolution, the Retirement System published an actuarial study on the cost to the fund of payments to the pre-1996 retirees. The study reports that the two retroactive supplemental payments will trigger immediate payments of $34 million, create additional liability for continuing payments of $114 million, and cause a new unfunded liability of $148 million. This liability does not include the Supplemental COLA payments that may be triggered in the future. Under the cost sharing formulas in Proposition C, the City and its employees will pay for these costs in the form of higher yearly contribution rates. The City Controller has projected the future cost to the City and its employees to be $260 million, with over $200 million to be paid in the next five fiscal years. The City obtained a permanent injunction to prevent SFERS from making Supplemental COLA payments to these members who retired before November 6, 1996. The Superior Court's injunction was affirmed by the Court of Appeal.

THE HETCH HETCHY PROJECT

General

The Hetch Hetchy Project impounds and delivers to the Water Enterprise water for approximately 2.7 million Bay Area residents and is forecasted to generate an average of 1,250,000 MWh of clean, renewable electricity annually for the next 10 years, which the Power Enterprise uses to serve its customers and for wholesale sales when generation exceeds customer demand. The Hetch Hetchy Project is comprised of approximately 384.3 megawatts ("**MW**") of nameplate capacity hydroelectric generating facilities in the Sierra Nevada and foothills of Tuolumne County, California. The Hetch Hetchy Project includes multiple water storage and water conveyance facilities (tunnels, pipelines, penstocks), generation facilities and transmission and associated transmission facilities from Hetch Hetchy Valley to Newark. See Figure 1-1 "San Francisco Public Utilities Commission Power Facilities."

History

As early as the 1880s, the City began looking to the Sierra Nevada and the Tuolumne River in what is now Yosemite National Park as a possible source of water for San Francisco and the Bay Area. Hetch Hetchy Valley, which is located on the Tuolumne River in Yosemite National Park, was first recommended as a reservoir site at the turn of the 20th Century in a United States Geological Survey Study. Then-City Mayor James D. Phelan made the first filings for water rights and reservoir rights-of-way in the Tuolumne River watershed as a private citizen, transferring those filings to the City in 1903.

Following the 1906 earthquake, the City again sought water rights and reservoir rights-of-way in the Tuolumne River watershed and began to develop a preliminary design for what would become the Hetch Hetchy Project. It also entered into negotiations with the Districts to protect the Districts' existing water rights and to provide them a share of the hydroelectricity to be produced by the Hetch Hetchy Project, at cost-based rates.

The Raker Act, enacted in 1913 (38 Stat. 242), granted rights of way to the City over federal lands in Yosemite National Park, Stanislaus National Forest, and unclassified public lands for purposes of constructing and operating the Hetch Hetchy Project, conceived by the City to provide water to the Bay Area and generate hydroelectricity as part of water delivery operations. Major facilities in place under authorized Raker Act rights of way issued by the United States Department of the Interior include O'Shaughnessy Dam and Hetch Hetchy Reservoir on the Tuolumne River in Yosemite National Park; Eleanor Dam and Reservoir in Yosemite National Park; Cherry Dam and Lake Lloyd in Stanislaus National Forest; Kirkwood, Holm, and Moccasin Powerhouses; and appurtenant facilities such as tunnels, penstocks and regulating reservoirs and electric transmission facilities. See "– Hydroelectric Generation" below.

The Raker Act grants the City the right to develop generation as part of the Hetch Hetchy Project and to sell electricity for beneficial use, first to meet San Francisco municipal needs, then the Districts' municipal and agricultural pumping needs, and finally for commercial purposes, provided that in each case such electricity may not be sold to a private corporation or individual for resale.

Wholesale electricity deliveries to the Districts are on an "as available" basis and are required by the Raker Act only after satisfying the City's own municipal needs. Any additional excess electricity supplies are sold to certain end-user retail customers and then on the wholesale market to public entities consistent with the requirements of the Raker Act. The Raker Act does not restrict the City's purchase, use and sale of non-Hetch Hetchy Project electricity. See "THE POWER ENTERPRISE – Wholesale Electricity Sales."

Hydroelectric Generation

The Hetch Hetchy Project is comprised of approximately 384.3 MW of large-scale hydroelectric facilities. The following table shows a timeline of Hetch Hetchy Project powerhouse improvements and impacts on installed capacity at the Hetch Hetchy Project.

TABLE 5
HETCH HETCHY PROJECT GENERATION RESOURCES
POWERHOUSE TIMELINE

Date	Event	Capacity Increases / (Decreases) in MW
1918	Early Intake Powerhouse commences operation	3.0
1923	O'Shaughnessy Dam completed	--
1925	Moccasin Powerhouse begins operations	80.0
1938	O'Shaughnessy Dam raised 85.5 feet	--
1960	Holm/Cherry Powerhouse commences operation	148.5
1967	Kirkwood Powerhouse (1st and 2nd units) commences operation	71.1
1967	Early Intake Powerhouse is removed	(3.0)
1969	New Moccasin Powerhouse replaces prior one	20.0
1986	Moccasin Low-head commences operation	3.8
1988	Kirkwood Powerhouse (3rd unit) commences operation	36.5
2005	Holm units 1 and 2 refurbished	16.5
2007	Kirkwood units 1 and 2 refurbished	7.9
	Total Installed Capacity:	384.3

Source: SFPUC.

The Hetch Hetchy Project includes three large reservoirs and three large hydroelectric powerhouses. The reservoirs, Cherry Lake, Lake Eleanor and the Hetch Hetchy Reservoir, have an aggregate water storage capacity of approximately 660,000 acre-feet. The powerhouses, Holm Powerhouse, Kirkwood Powerhouse and Moccasin Powerhouse, have an aggregate nameplate capacity of approximately 380.5 MW. Holm Powerhouse has two generating units, totaling approximately 165 MW in nameplate capacity, and relies on gravity-driven water flowing downhill from Cherry Lake. Kirkwood Powerhouse has three generating units, with an aggregate nameplate capacity of approximately 115 MW. Moccasin Powerhouse has two generating units, with an aggregate nameplate capacity of approximately 100 MW. Both Kirkwood and Moccasin rely on gravity-driven water flowing downhill from the Hetch Hetchy Reservoir. There is also a smaller, gravity driven in-line 3.8 MW hydroelectric unit near Moccasin Powerhouse, Moccasin Low-head. The Moccasin Low-head Powerhouse was damaged during a storm in March 2018 and is not currently operational; however, it is scheduled to be operational by December 2023.

The combined generating capacity of these facilities is approximately 384.3 MW, about 97% of the Power Enterprise's aggregate 416.6 MW of controlled generation capacity. Annual Hetch Hetchy Project generation is forecasted to generate an average of 1.25 million MWh of clean, renewable electricity annually for the next 10 years, which represents on average approximately 105% of the Power Enterprise's firm retail load. These multiple, sizable hydroelectric generating units, and ready access to California energy markets through available transmission resources, provide the Power Enterprise with redundancy to address both planned and unexpected outages, helping to ensure reliable, firm service for its customers.

Transmission and Distribution

Electricity generated by the Hetch Hetchy Project is transmitted through SFPUC-owned and operated transmission lines, consisting of approximately 110 miles of 115 kilovolt ("**kV**") and 50 miles of 230 kV transmission tower miles, plus four substations/switchyards. The SFPUC transmission segments are described in the following table.

TABLE 6
HETCH HETCHY PROJECT TRANSMISSION LINE SEGMENTS

Lines No.	Voltage	Transmission Line Alignment / Segment	Year Put into Operation	Approximate Length (miles)
1 & 2	230 kV	Holm Powerhouse to SFPUC's Intake Switchyard	1961	1.6
3 & 4	115 kV	Moccasin Switchyard to PG&E's Newark Substation	1925	98.3
5 & 6	230 kV	Intake Switchyard to SFPUC's Moccasin Switchyard	1961	20.1
		Moccasin Switchyard to SFPUC's Warnerville Substation	1961	28.3
7 & 8	115 kV	SFPUC's Warnerville Substation to Modesto Irrigation District's Standiford Substation	1961	12.5
9 & 10	230 kV	Kirkwood Powerhouse to SFPUC's Intake Switchyard	1964	0.7
11	230 kV	Kirkwood Powerhouse to SFPUC's Intake Switchyard	1987	0.7

Source: SFPUC.

The transmission facilities also interconnect with PG&E's transmission and distribution systems to deliver SFPUC generated or purchased power to customers of the Power Enterprise in and around San Francisco. The Hetch Hetchy Project has a small amount of load connected directly to its system, averaging approximately 4.5 MW, with a 10 MW peak during water pumping operations to support both Hetch Hetchy Water and Power operations, and the Water Enterprise's municipal water operations.

Approximately 75% of the Hetch Hetchy Project's generating capacity is connected to its 230 kV system via Intake Switchyard and Warnerville Substation. Intake Switchyard is a 230 kV switchyard configured using main and auxiliary buses. The switchyard was initially put into service in about 1961. Intake Switchyard provides the main accumulation, switching, and transmission point for the Holm and Kirkwood powerhouses (Lines 1 and 2 from Holm Powerhouse and Lines 9, 10 and 11 from Kirkwood Powerhouse). A failure of any critical component within this switchyard represents a significant loss of electric generation and transmission capability. From Intake Switchyard, electricity is transmitted to the SFPUC's Warnerville Substation via Lines 5 and 6. The Warnerville Substation, put in operation in about 1961, is segregated into three areas: 230 kV yard, 115 kV yard, and PG&E 230 kV tap yard. The 230 kV yard has a main and transfer bus configuration and consists of two incoming lines, Lines 5 and 6, three 230/115 kV transformers, and two tap lines for PG&E. The 115 kV system has a main bus, two transformer positions and two line positions, Lines 7 and 8 towards MID's Standiford Substation.

The remaining 25% of the Hetch Hetchy Project's capacity is normally connected to another 115 kV sub system at the Moccasin Switchyard which interconnects with PG&E's Newark Substation via two 115 kV lines, Lines 3 and 4. Taps off of these lines connect to Turlock Irrigation District at TID's Oakdale Substation, and the

Calaveras Substation serving Water Enterprise facilities in Sunol. The Moccasin Powerhouse can be connected to either the 115 kV or 230 kV systems.

Approximately 39 miles of electric 22.9 kV and 2.9 kV distribution lines provide electricity to the Hetch Hetchy Project's remote operations. The distribution is fed from the powerhouses, where electricity is generated at 13.8 kV then stepped up to 22.9 kV. At some remote sites, the electricity is stepped down to 2.4 kV for distribution.

Physical Condition of Facilities

In 2009, the SFPUC and its consultants began performing condition assessments for various Hetch Hetchy Project facilities and, since that time, have undertaken certain updates to the assessments. The following sections describe the physical condition of those facilities, as well as major capital projects relating to such facilities. Several of these capital projects are for Hetch Hetchy Project facilities that are joint assets and are used for both water transmission and power generation and transmission, benefiting both Hetch Hetchy Water and the Power Enterprise. 55% of the combined operating and capital costs of the Joint Facilities are allocated to the Power Enterprise and 45% of the combined operating and capital costs of the Joint Facilities are allocated to Hetch Hetchy Water. For more information regarding the Joint Facilities, see "INTRODUCTION – The San Francisco Public Utilities Commission and the Power Enterprise."

Generation Facilities

The SFPUC owns and operates multiple power generation assets, including high-head and low-head hydropower houses, which have been in operation since the 1960s. These assets are all operated and maintained within the Hetch Hetchy Project. Hetch Hetchy Water and Power is responsible for the maintenance and operation of multiple power generation assets, most of which are integral to its water delivery system. These assets include Holm Powerhouse, Kirkwood Powerhouse, Moccasin Powerhouse, and Moccasin Low Head Powerhouse. For a description of these assets, see "– Hydroelectric Generation."

Generally, civil assets, such as structures, dams, tunnels, and pipes, have a service life of up to 100 years, while mechanical and electrical equipment within powerhouses have a shorter service life of approximately 15-20 years, depending on the equipment. For planning purposes, the SFPUC assumes expected life of equipment based on industry standards and manufacturer's design life. Actual expected life of equipment may vary depending on different factors including, but not limited to, site conditions, run time, loading, and maintenance. The SFPUC has experienced equipment life expectancies beyond industry standards; however, as equipment ages and technology expires, obtaining replacement parts may become a challenge.

The cost and operational impact to the SFPUC of either a loss of a generating unit or the inability to generate from a powerhouse varies. For example, at Holm Powerhouse, there would be significant cost and operational impacts if either unit were not available for generation for a one-year period. At Kirkwood Powerhouse, the loss of one of the three units would have moderate cost and operational impacts; however, the loss of two of the three units would become significant. Similarly, at Moccasin Powerhouse, the loss of either unit would have moderate cost and operational impacts; however, the loss of both units would be significant.

During the summer and fall period, each hydroelectric generation unit is taken out of service for two weeks to perform annual maintenance. Annual maintenance consists of inspections, testing and maintenance of the units. Corrective maintenance activities that require a full system outage are also sometimes scheduled during the annual outage period; however, the SFPUC focuses on and prioritizes proactive maintenance activities.

SFPUC construction costs are generally higher than industry average, in part because of the remote location of Hetch Hetchy Project facilities. Large, active capital projects associated with the power generation assets, all of which are part of the 2024 Capital Plan (as defined herein), include, but are not limited to the following:

- Kirkwood Powerhouse Bypass Upgrades: The SFPUC water supply must be conveyed through Kirkwood Powerhouse. When powerhouse generating units are out of service (e.g., planned or unplanned outage), water flows through an energy dissipation system, or generator bypass, conveying water around the turbines at Kirkwood Powerhouse. The existing hydraulic bypass and energy-dissipation system cannot be operated for more than about two weeks without incurring significant damage. The SFPUC is updating the bypass system to ensure reliable water deliveries. The total budget for this project in the 2024 Capital Plan, as well as the current forecast, is $16.2 million. As of June 30, 2023, $0.09 million has been spent on this project. The project is currently on hold but is expected to resume in 2027-2028. This project is expected to be completed in 2035.

- Moccasin Powerhouse Bypass Upgrade: Like Kirkwood Powerhouse, the SFPUC water supply is conveyed through the generating units at Moccasin Powerhouse, which must be bypassed during planned or unplanned outages. The existing hydraulic bypass and energy-dissipation system cannot be operated for more than about two weeks without incurring significant damage. The SFPUC is updating the bypass system to ensure reliable water deliveries. The total budget for this project in the 2024 Capital Plan is $27.4 million. The current forecasted cost is $40.7 million. As of June 30, 2023, $1.2 million has been spent on this project. This project is expected to be completed in 2027.

- Moccasin Powerhouse and Generator Step-Up Rehabilitation: This project consists of three components: (1) generator rehabilitation, which consists of replacing the entire generator and associated equipment; (2) generator step-up replacement, which consists of replacing two of the three existing generator step-up transformers, new foundations and oil containment, and relay upgrades; and (3) power plant systems upgrades, which consists of replacing the 480 voltage switchgear, 13.8 kilovolt switchgear, motor control centers, main control boards, protective relays, cooling water piping, and improving oil containment systems. The total budget for this project in the 2024 Capital Plan is $66.7 million. The current forecasted cost is $107 million. As of June 30, 2023, $30.4 million has been spent on this project. The generator step-up replacement project was completed in 2023. The generator rehabilitation project is expected to be completed in 2025, and the power plant systems upgrades is expected to be completed in 2028.

Additionally, the SFPUC has an ongoing replacement and rehabilitation program funded at approximately $500,000 to $2.5 million a year to provide inspections, condition assessments, design, environmental evaluations, and construction to sustain the reliability of its generation facilities. Funding from the replacement and rehabilitation program was used to fund the improvements at Moccasin Low-Head Powerhouse. This work is scheduled to be completed by December 2023.

Transmission and Distribution Facilities

Transmission. The Hetch Hetchy Project electricity delivery system includes transmission lines and switchyards/substations, including Lines 1 and 2, Lines 3 and 4, Lines 5 and 6, Lines 7 and 8, and Lines 9, 10 and11, Intake Switchyard, Moccasin Switchyard, Warnerville Substation, and Calaveras Substation. These assets vary in age, condition, and estimated service life remaining. For planning purposes, the SFPUC assumes expected life of equipment based on industry standards and manufacturer's design life. Actual expected life of equipment will vary depending on a variety of factors, but the largest driver for a transmission system is site conditions.

A majority of the Hetch Hetchy Project's transmission lines were built in the 1960s and have a remaining life expectancy of about 15 years, depending on equipment. However, Lines 3 and 4 were built in 1925 and have exceeded their expected life expectancy. Although Lines 3 and 4 are at end of life, the existing lines are acceptable for limited continued use with selective refurbishment. Lines 3 and 4 are important to the delivery of electricity by the Power Enterprise, and the SFPUC anticipates that there would be moderate cost and operational impacts were they to go out of service. A complete rebuild will ultimately be required for long-term continued use of this transmission segment. The 2024 Capital Plan includes funding for a condition assessment and strategic business planning for replacement and/or upgrade of Lines 3 and 4.

Transmission system reliability is affected by new, renewable generation being added to the California grid, or requests to interconnect with the SFPUC transmission system. Funding for these transmission system improvements will be collected from the developers, however, collection schedules do not always work with SFPUC construction schedules and the SFPUC may provide upfront funding that will be eventually paid back by the developers. To help mitigate the impacts of new renewable power generation being added to the California electrical grid, as well as resolve clearance detections, the SFPUC has an active project to reconductor Lines 7 and 8. This project, which is part of the 2024 Capital Plan, is described below:

- Transmission Lines 7 and 8 Upgrades: This project includes the replacement of the existing 115 kilovolt conductors on Lines 7 and 8 from Warnerville to Standiford substations. The total budget for this project in the 2024 Capital Plan, as well as the current forecast, is $38.0 million. To date, the SFPUC has received $27.4 million in developer funding for this project, and anticipates collecting a total of $33.3 million in mitigation payments. As of June 30, 2023, $5.7 million has been spent on this project. This project is expected to be completed in 2025.

To maintain the current level of reliability of these transmission lines, substantial future maintenance and upkeep will be required; currently these improvements are addressed with the SFPUC's ongoing rehabilitation and replacement program, which is funded at about $3-6 million per year. The rehabilitation and replacement program includes, but is not limited to inspections, condition assessments, design, environmental evaluations, and construction.

Hetch Hetchy Project substations/switchyards were built in the 1960s. Like the powerhouses, the SFPUC has experienced life expectancies beyond industry standards but is experiencing challenges obtaining replacement parts as the equipment ages and technology expires. In 2014, Intake Switchyard was rebuilt, and in 2019, the 115 kV side of the Warnerville Substation was rebuilt. Within the next 10 years, the remainder of the 230 kV side of the Warnerville Substation and Moccasin Switchyard are expected to be rebuilt. These projects, which are part of the 2024 Capital Plan, are described below:

- Warnerville Substation Rehabilitation: This project will rehabilitate the substation and includes improvements to meet reliability requirements and intertie agreements. Upgrades include replacing three existing three-phase transformers with two larger rated transformers. In addition, other upgrades include new 115 kilovolt and 230 kilovolt disconnect switches and breakers, a new control room, a new perimeter fence, relays and controls, and improving the grading and grounding system. The total budget for this project in the 2024 Capital Plan is $34.3 million. The current forecasted cost is $36.1 million. As of June 30, 2023, $23.0 million has been spent on this project. This project is expected to be completed in 2026.

- Moccasin Switchyard Rehabilitation: This project will rehabilitate the switchyard, including replacing the 115 kilovolt disconnect switches, replacing the 115 kilovolt bus configuration, replacing the 230 kilovolt disconnect switches, changing the 230 kilovolt bus configuration, replacing the 115 kilovolt circuit breakers, adding surge arresters, performing a fault study and a grounding study, improving switchyard grading, and replacing fencing. The total budget for this project in the 2024 Capital Plan, as well as the current forecast, is $9.7 million. As of June 30, 2023, $0.08 million has been spent on this project. This project is expected to be completed in 2028.

Intake Switchyard, Moccasin Switchyard and Warnerville Substation are necessary to transmit Hetch Hetchy Project generation to the grid. The SFPUC anticipates that there would be significant cost and operational impact if Intake Switchyard, Moccasin Switchyard or Warnerville Substation were inoperable.

Calaveras Substation feeds the SFPUC facilities at Sunol Valley Water Treatment Plant. Though the financial impact from loss of this substation would be small, the operational impact to the water operations would be significant. The substation is in good condition. Certain improvements will be made to improve redundancy by purchasing critical spare equipment which have long lead times. This project, which is part of the 2024 Capital Plan, is described below:

- Calaveras Substation: This project will include procuring critical spare equipment. The total budget for this project in the 2024 Capital Plan, as well as the current forecast, is $0.4 million. As of June 30, 2023, no funds have been spent on this project. This project is expected to be completed in 2025.

Furthermore, a condition assessment completed over the period between 2012-2014 of the SFPUC's transmission lines identified over 200 safety detections that did not meet National Electric Safety Code and/or CPUC General Order Number 95 minimum safety clearance criteria. In response to these findings, the SFPUC has increased maintenance and selective refurbishment activities to preserve and extend the operability of these lines and to meet regulatory requirements. See "POWER ENTERPRISE CAPITAL PROGRAM" and "CERTAIN RISK FACTORS – Risks Related to Power Enterprise Operations and Facilities – *Operational Liability*."

The Hetch Hetchy Project includes approximately 40 miles of power distribution system. Approximately 20 miles of the system were replaced after being destroyed in the 2013 Rim Fire. For more information about the 2013 Rim Fire and the impact of wildfires on the Power Enterprise, see "– Wildfire Considerations."

Additionally, the SFPUC has an ongoing replacement and rehabilitation program funded at approximately $1-2 million a year to provide inspections, condition assessments, design, environmental evaluations, and construction to sustain the reliability of the electric distribution system.

Reservoir and Dam Facilities

The Hetch Hetchy Project owns and operates six dams that are under the California Division of Safety of Dams ("**DSOD**") jurisdiction. Five of these dams are associated with the SFPUC's hydrogeneration facilities: O'Shaughnessy Dam, Cherry Valley Dam, Eleanor Dam, Priest Dam and Moccasin Dam. The sixth dam is the Early Intake Dam. The SFPUC has an ongoing comprehensive dam safety program to monitor, inspect and maintain the dams to ensure public safety downstream. The extensive program establishes policies, objectives, and expectations as they relate to dam safety, including surveillance and monitoring programs. Emergency action plans for all applicable dams are maintained and reviewed and/or updated annually.

In 2018, then-Governor Brown ordered the DSOD to identify spillways in California associated with large high-hazard dams that could pose significant risk to the public if a spillway incident like the Oroville Dam in 2017 were to occur. This included condition assessments of the spillways for O'Shaughnessy Dam and Cherry Valley Dam. Spillway assessments were completed and submitted to DSOD in 2019 for their review.

In 2020, the SFPUC delivered to the DSOD a conceptual plan for implementing known dam safety projects over the next 15 years, known as the 15-Year Dam Safety Plan. The DSOD has reviewed and responded favorably to the conceptual plan. The SFPUC continues to make progress on the dam safety projects that are currently authorized under the existing capital program. Information regarding these facilities (dams, outlet piping, valves and spillways), including condition assessment and upcoming projects, are summarized below. The SFPUC takes into consideration climate change when evaluating new capital projects for its dams and reservoirs.

The DSOD categorizes the condition of each of the dams within its jurisdiction as: "satisfactory," meaning no existing or potential dam safety deficiencies are recognized; "fair", meaning no existing dam safety deficiencies are recognized for normal loading conditions, and rare or extreme hydrologic and/or seismic events may result in a dam safety deficiency; "poor," meaning dam safety deficiency is recognized for loading conditions that may realistically occur, and remedial action is necessary; "unsatisfactory," meaning a dam safety deficiency is recognized that requires immediate or emergency remedial action for problem resolution; or "not rated," meaning the dam has not been inspected or is not under State jurisdiction.

Information regarding the six dams under DSOD jurisdiction, DSOD's characterization of the dam's condition, and certain large, active capital projects associated with the dams, all of which are part of the 2024 Capital Plan, are described below.

<u>O'Shaughnessy Dam</u>: O'Shaughnessy Dam and the Hetch Hetchy Reservoir are in Yosemite National Park. O'Shaughnessy Dam is a 312 foot-high above-streambed (430 feet above the lowest point in the foundation) gravity arch dam that impounds 360,360 acre-feet (capacity with drum gates in use) of water along the main stem of the Tuolumne River, creating the Hetch Hetchy Reservoir. The dam was originally built in 1923 and raised in 1938. The Hetch Hetchy Reservoir collects water from the surrounding 459 square miles of the Hetch Hetchy watershed. Water from this reservoir is drafted through Kirkwood and Moccasin powerhouses. The DSOD categorizes the condition of

O’Shaughnessy Dam as “satisfactory.” Release valves at O’Shaughnessy Dam need to be upgraded due to their age. Large, active capital projects planned for rehabilitation of outlet works facilities and the diversion tunnel, which will improve the safety and functionality of the reservoir release system, are described below.

- O’Shaughnessy Dam Outlet Works Phase I: This project will include the replacement of two existing instream flow release valves, improvements to access and drainage in the dam gallery and stairs, installation of new bulkheads for outlet intake, and planning for slide gate and drum gate improvements. Because this project is for a Joint Facility, 55% of the project costs are allocated to the Power Enterprise. The total budget for this project, as well as the current forecast, is $48.0 million (55%, or $26.4 million, of which is allocated to the Power Enterprise). As of June 30, 2023, $6.1 million has been spent on this project (55%, or $3.4 million, of which is allocated to the Power Enterprise). This project is expected to be completed in 2025.

- O’Shaughnessy Dam Outlet Works Phase II: This project will include replacement of a 72-inch needle valve and rehabilitation of a 72-inch butterfly valve, replacement of six 60-inch needle valves and controls, rehabilitation of three drum gates, refurbishment of twelve slide gates, installation of a new diversion pipe isolation valve, and diversion tunnel rehabilitation. Because this project is for a Joint Facility, 55% of the project costs are allocated to the Power Enterprise. The total budget for this project, as well as the current forecast, is $98.0 million (55%, or $53.9 million, of which is allocated to the Power Enterprise). This project is expected to begin in 2026 and be completed by 2034.

Cherry Valley Dam: Cherry Valley Dam is a 330-foot-high earth and rock fill dam. Lake Lloyd, the reservoir impounded by Cherry Valley Dam, stores approximately 273,500 acre-feet. The dam was built in 1955. Water from the Cherry watershed is used for downstream flow obligations and power generation at Holm Powerhouse. The DSOD categorizes the condition of Cherry Valley Dam as “satisfactory.” The SFPUC completed a needs assessment report for Cherry Dam, which defined the need for capital improvements, primarily to address spillway deficiencies and the intake tower’s inability to handle seismic loads. The SFPUC is prioritizing the spillway scope of work. This project, which is part of the 2024 Capital Plan, is described below:

- Cherry Dam Spillway – Short-Term Improvements: This project includes improvements downstream of the concrete spillway structure that will accommodate higher flows. Because this project is for a Joint Facility, 55% of the project costs are allocated to the Power Enterprise. The total budget for this project, as well as the current forecast, is $24.9 million (55%, or $13.7 million, of which is allocated to the Power Enterprise). As of June 30, 2023, $1.5 million has been spent on this project (55%, or $0.82 million, of which is allocated to the Power Enterprise). This project is expected to be completed in 2027. An additional project to address the intake tower and long-term improvements to the spillway is also expected to be initiated within 15 years.

Eleanor Dam: Eleanor Dam is a 70-foot concrete buttressed arch dam. Lake Eleanor stores approximately 27,113 acre-feet (capacity with flashboards). The dam was built in 1918. Water from the Lake Eleanor is diverted (gravity or pumping) to Lake Lloyd and used for downstream flow obligations and power generation at Holm Powerhouse. The DSOD categorizes the condition of Eleanor Dam as “satisfactory.” In 2015-2016, the SFPUC completed a needs assessment report for Eleanor Dam, which identified the need for multiple capital improvements. There were two primary issues identified: (1) condition of the bridge over the top of dam; and (2) erosion and scour due to the dam overtopping. First, the bridge over the top of the dam is showing signs of distress and needs to be repaired or replaced soon. In addition to access, the bridge serves as a critical structure to maintain the dam’s structural integrity during an earthquake. Second, the capacity of the existing spillway is not adequate, resulting in the overtopping of the dam. Over the years, this has resulted in some erosion and scour on the downstream side of the dam. To address these issues, the SFPUC is planning the following project, which is part of the 2024 Capital Plan:

- Eleanor Dam Rehabilitation: This project will address the cracking and spalling of concrete, exposed rebar, leakage through the arch barrels, cracks and erosion of the spillway concrete, and spillway capacity. Because this project is for a Joint Facility, 55% of the project costs are allocated to the Power Enterprise. The total budget for this project, as well as the current forecast, is $28.6 million (55%, or

$15.7 million, of which is allocated to the Power Enterprise). This project is expected to begin late 2023 and to be completed in 2031.

Priest Dam: Priest Dam is a 160-foot-high earth and rock dam that impounds a storage volume of 1,706 acre-feet. The dam was built in 1923. Priest Reservoir is a regulating reservoir and stores Hetch Hetchy water before it reaches the Moccasin Powerhouse via the Moccasin Power Tunnel. The DSOD categorizes the condition of Priest Dam as "satisfactory." Priest Dam has a long history of issues related to settlement and deflection. The SFPUC has an ongoing rehabilitation and replacement program that focuses on performing a geotechnical exploration of the dam, updating the stability analysis, and installing new instrumentation to monitor and document the movement of the dam under varying reservoir storage conditions to (i) update the current surveillance and monitoring plan for the dam; and (ii) serve as the technical basis for future capital improvements that may be necessary.

In addition, wildfire can impact the water quality of water that could enter Priest Reservoir. For more information about the impact of wildfires on the Power Enterprise and the SFPUC's mitigation strategies, see "–Wildfire Considerations."

Moccasin Dam: Moccasin Dam is a 70-foot-high earth and rock dam that impounds a storage volume of 552 acre-feet. The dam was built in 1929. This is a regulating reservoir for Moccasin Low-head Powerhouse. The DSOD categorizes the condition of Moccasin Dam as "fair." The lower rating is the impact of a flood event in 2018, which required a reevaluation of the design flood. To increase the rating to "satisfactory", the SFPUC will be required to increase the release capacity of the system to meet the requirements of the updated design flood, which is now approximately double the flood of record. To address this, the SFPUC is planning the following project, which is part of the 2024 Capital Plan:

- Moccasin Dam and Reservoir Long-Term Improvements: This project has been initiated to construct a new concrete spillway with adequate flow capacity along the alignment of the existing auxiliary spillway and additional flood protection to the Moccasin project facilities. Because this project is for a Joint Facility, 55% of the project costs are allocated to the Power Enterprise. The total budget for this project, as well as the current forecast, is $73.2 million (55%, or $40.2 million, of which is allocated to the Power Enterprise). As of June 30, 2023, $1.9 million has been spent on this project (55%, or $1.1 million, of which is allocated to the Power Enterprise). This project is expected to be completed in 2028.

Early Intake Dam: Early Intake Dam is a single-curvature concrete arch structure, constructed between 1923 and 1924 to direct deliveries from the Tuolumne River into Mountain Tunnel for San Francisco water customers. The dam is reaching the end of its design life. Engineering studies concluded that permanent repair of the alkali aggregate reaction concrete is not feasible, and the dam should be replaced. The DSOD categorizes the condition of Early Intake Dam as "fair" due to the condition of the dam. To address these issues, the SFPUC is planning the following project, which is part of the 2024 Capital Plan:

- Early Intake Dam Interim and Long-Term Improvements: The Early Intake Dam Interim Improvement project was initially developed to provide short-term improvements to the dam, but will now provide the needed engineering alternative studies to determine the scope and cost for the long-term remediation, as well as planning to address the deterioration and structural concerns of the existing dam. Because this project is for a Joint Facility, 55% of the project costs are allocated to the Power Enterprise. The total budget for these combined projects, as well as the current forecast, is $91.5 million (55%, or $50.3 million, of which is allocated to the Power Enterprise). As of June 30, 2023, $0.56 million has been spent on this project (55%, or $0.30 million, of which is allocated to the Power Enterprise). This Early Intake Dam Interim Improvement project is expected to be completed in 2023, with work continuing under the Early Intake Dam Long-Term Improvement project. The long-term project scope of replacing the deteriorated Early Intake Dam with a new concrete dam or diversion structure is expected to be completed in 2031.

In addition, the SFPUC has an ongoing rehabilitation and replacement program funded at approximately $500,000 to $1.5 million a year to continue inspections, condition assessments, design, environmental evaluations, and as-needed construction to meet the DSOD dam assessment requirements. Projects for power asset dams (Priest Dam) and joint asset dams (O'Shaughnessy, Eleanor, Early Intake, and Cherry dams) have been included in the 2024 Capital Plan and are ongoing.

Conveyance Facilities

Penstocks: Approximately every 20 years, the SFPUC performs internal inspections on its penstocks, which also convey the SFPUC's water supply, to proactively identify potential vulnerabilities before major problems occur. Penstocks that are for power generation only are inspected less frequently. Over the next several years, the SFPUC will be reevaluating its penstock inspection and maintenance program to ensure a systematic approach to managing these assets. The effort will review current inspection and maintenance activities, including frequency. Information regarding the penstocks and certain large, active capital projects associated with the penstocks, all of which are part of the 2024 Capital Plan, are described below.

- Kirkwood Penstock: Built in 1964, the Kirkwood Penstock conveys water from Canyon Power Tunnel to Kirkwood Powerhouse. In response to a portion of the Kirkwood Penstock foundation experiencing significant movement in 1984 and 2007, the SFPUC completed a risk assessment for the asset. Multiple short-term risk reduction measures were recommended, including installation of an automated monitoring system and pre-procurement of long-lead replacement couplings, both of which have been completed. The SFPUC monitors penstock movement. Although there has been no significant movement, small movements indicate an ongoing stability issue. The SFPUC will continue to monitor the foundation with the goal of deferring the need for a large capital project for at least 20 years.

- Moccasin Penstock: The Moccasin Penstocks convey water from Moccasin Power Tunnel, downstream of Priest Reservoir, to Moccasin Powerhouse. Moccasin Penstock was built in 1925, with new sections completed in 1969. A condition assessment in 2011 identified corrosion, impacting the structural integrity of the asset, as well as degradation of the concrete anchor/saddle system.

    - *Moccasin Penstock Rehabilitation*: This project includes (i) rehabilitation of anchor blocks, penstock coating, penstock saddles, air valves, large-diameter butterfly valves, bifurcation section, and flow meters; and (ii) upgrading the electrical system, power transformers, the standby generator at West Portal Valve House, and the bulkhead isolation valves in the surge tower. Because this project is for a Joint Facility, 55% of the project costs are allocated to the Power Enterprise. The total budget for this project, as well as the current forecast, is $47.3 million (55%, or $26.0 million, of which is allocated to the Power Enterprise). As of June 30, 2023, $7.2 million has been spent on this project (93%, or $6.7 million, of which is allocated to the Power Enterprise). This project is expected to be completed in 2028.

- Holm Penstock: Built in 1960, the Holm Penstock conveys water from Cherry Power Tunnel to Holm Powerhouse. No work is currently planned for Holm Penstock.

Tunnels: Approximately every 15 years, the SFPUC performs internal inspections on its tunnels, which also convey the SFPUC's water supply, to proactively identify potential vulnerabilities before major problems occur. Tunnels that are for power generation only are inspected less frequently. Information regarding the tunnels and certain large, active capital projects associated with the tunnels, all of which are part of the 2024 Capital Plan, are described below.

- Canyon Power Tunnel: Built in 1965, Canyon Power Tunnel is a 10.8 mile-long tunnel that conveys water from O'Shaughnessy Dam to Kirkwood Penstock, feeding Kirkwood Powerhouse. Most of the tunnel is horseshoe-shaped and measures approximately 14 feet by 14.5 feet. Canyon Power Tunnel includes two adits, North Mountain and Hetch Hetchy Adit. In 2007 and 2008, Hetch Hetchy Water and Power staff observed increased leakage at the Hetch Hetchy Adit weir. During a five-day shutdown in January 2009, temporary repairs to the concrete plug in the Hetch Hetchy Adit of the tunnel were undertaken to reduce the 200 to 300 gallons per minute exiting from cracks and deteriorated concrete in the plug. Canyon Tunnel was last inspected in 2009 and was found to be in very good condition, however, rehabilitation work is required at the Hetch Hetchy Adit.

  - *<u>Canyon Tunnel - Hetchy Adit Rehabilitation</u>*: This project will replace the Hetch Hetchy Adit with a new concrete-gated structure. Because this project is for a Joint Facility, 55% of the project costs are allocated to the Power Enterprise. The total budget for this project, as well as the current forecast, is $15.0 million (55%, or $8.2 million, of which is allocated to the Power Enterprise). As of June 30, 2023, $1.3 million has been spent on this project (55%, or $0.73 million, of which is allocated to the Power Enterprise). This project is expected to be completed in 2026.

- <u>Early Intake Bypass Tunnel and Pipeline</u>: The Early Intake Bypass Tunnel and Pipeline conveys water from Kirkwood Powerhouse directly into the Mountain Tunnel. The bypass consists of a tunnel on the northern side of the Tuolumne River, leading to a steel pipe crossing the Tuolumne River to Mountain Tunnel on the southern side. The 1,725-foot tunnel is horseshoe-shaped, varying in diameter from 10 feet to 14.6 feet. The water exits the Early Intake Bypass Tunnel, entering a 293-foot-long, 9.5 foot-diameter pipeline that crosses over the Tuolumne River. The Early Intake Bypass Tunnel and Pipeline was last inspected in 2019 and found to be in satisfactory condition.

- <u>Mountain Tunnel</u>: Built between 1917 and 1925, Mountain Tunnel extends 19.2 miles from Early Intake Dam to Priest Reservoir. Most of the tunnel is horseshoe-shaped, and measures approximately 14 feet by 14.5 feet. The first 7.2 miles of Mountain Tunnel west from Early Intake are unlined, except for small, lined areas at each adit and a short section approximately 400 feet east of South Fork Adit. Nine of the remaining 12 miles of tunnel are lined. This asset was inspected in 2007, 2008, 2017 and 2019.

  - *<u>Mountain Tunnel Improvement Project</u>*: This project includes rehabilitation of the tunnel under the Mountain Tunnel Improvement Project for which construction started in 2021 and will continue through December 2026. As an improvement to the system, the SFPUC is constructing a new flow control facility within the Mountain Tunnel, installed just above Priest Reservoir. The purpose of the facility will be to maintain constant pressure and thus reduce wear and tear on the tunnel during operation. In addition, the Priest Adit Tunnel is being constructed to provide access to Mountain Tunnel without having to drain Priest Reservoir, providing operational flexibility. Because this project is for a Joint Facility, 55% of the project costs are allocated to the Power Enterprise. The total budget for this project, as well as the current forecast, is $118.8 million (55%, or $65.3 million, of which is allocated to the Power Enterprise). As of June 30, 2023, $76.8 million has been spent on this project (55%, or $42.3 million, of which is allocated to the Power Enterprise). This project is expected to be completed in 2027.

- <u>Moccasin Power Tunnel</u>: Moccasin Power Tunnel is a 1-mile-long tunnel that conveys water from Priest Reservoir to the Moccasin Penstocks (leading to Moccasin Powerhouse). Most of the tunnel is horseshoe-shaped, and measures approximately 13 feet by 13 feet. Moccasin Power Tunnel was last inspected during in 2019 and found to be in satisfactory condition.

- <u>Eleanor-Cherry Tunnel</u>: Eleanor-Cherry Tunnel is a 1.1-mile-long tunnel that conveys water from Lake Eleanor to Lake Lloyd. The tunnel is horseshoe-shaped, and measures approximately 8.5 feet by 8.5 feet. Eleanor-Cherry Tunnel was inspected within the last 10 years. The tunnel was found to be in satisfactory condition. The Cherry Reservoir Pump Station contains ten pumps that draw water from Lake Eleanor to Lake Lloyd. Five of these pumps are inoperable and the remaining five pumps are at continued risk of failure.

  - *<u>Cherry-Eleanor Pumps</u>*: This project is to replace and upgrade the pumps, transformer, and pump motor starters in Cherry Pump Station, and to install a programmable logic controller, a supervisory control and data acquisition ("**SCADA**") system, and fiber optics. The existing motor control center building will be improved. The total budget for this project, as well as the current forecast, is $40.2 million. This project is expected to start in 2025 and to be completed in 2031.

- Cherry Power Tunnel: Cherry Power Tunnel is a 5.6-mile-long tunnel that conveys water from Lake Lloyd to Holm Penstock. Most of the tunnel is horseshoe-shaped, and measures approximately 12 feet by 12.5 feet. Cherry Power tunnel was last inspected in 2000 and found to be in satisfactory condition. Work was performed on the tunnel to improve efficiency (reduce tunnel friction losses).

In addition, the SFPUC has an ongoing rehabilitation and replacement program to continue inspections, condition assessments, design, environmental evaluations, and as-needed construction to sustain the reliability of water conveyance assets with capital improvements. Projects for power-funded water conveyance assets (Kirkwood Penstock, Holm Penstock, Cherry Power Tunnel and Cherry Pump Station, Priest Gate Tower, Priest Canal, Moccasin Power Tunnel and surge tower, West Portal, and Moccasin Penstock) and joint-funded water conveyance assets (Canyon Tunnel and adits, Can-yon Portal, Mountain Tunnel Headgates, Early Intake Bypass, Mountain Tunnel Diversion Access at Early Intake, Mountain Tunnel shafts and adits, South Fork Crossing and adits, and Priest Reservoir Bypass) are included in the 2024 Capital Plan and are ongoing.

Utilities

The Hetch Hetchy Project includes buildings/offices, roads and bridges to access facilities, and other utilities including water and wastewater systems, communications, and security. Information regarding various facilities, roads and bridges, and other utilities is described below.

Facilities: The SFPUC is responsible for over 80 buildings, structures, facilities, and systems, many of which were constructed in the early 1900s to facilitate the construction of the Regional Water System (as defined herein). Capital improvements are needed to provide employees and staff with safe, comfortable, and efficient facilities. Large, active capital projects associated with facilities, all of which are part of the 2024 Capital Plan, include, but are not limited to the following:

- Moccasin Old Powerhouse Hazard Mitigation: The Moccasin Old Powerhouse was constructed in 1926 and abandoned in the 1960s and is currently used for storage of large equipment and critical spares. The building has multiple structural and nonstructural issues, including cracks, spalling of structural concrete, water intrusion, broken windows, settlement, hazardous materials, and seismic deficiencies. This project will design and install mitigation measures to prevent the building from collapsing and to prevent hazardous materials from contaminating Moccasin Reservoir. Because this project is for a Joint Facility, 55% of the project costs are allocated to the Power Enterprise. The total budget for this project, as well as the current forecast, is $17.4 million (55%, or $9.6 million, of which is allocated to the Power Enterprise). As of June 30, 2023, $0.58 million has been spent on this project (55%, or $0.32 million, of which is allocated to the Power Enterprise). This project is expected to be completed in 2028.

- Moccasin Engineering and Records Building: Hetch Hetchy Water and Power project operation and administration is in Moccasin, California, with facilities including buildings, office trailers, warehouses, shops, laboratories, and sheds. Many of these existing facilities are deteriorating, do not meet current building codes, and are incurring increased maintenance costs. This project will design and construct a 25,000 square-foot, two-story building to create adequate office space for current and future staff. In addition, new records and archives space and new server space will be included. Because this project is for a Joint Facility, 55% of the project costs are allocated to the Power Enterprise. The total budget for this project, as well as the current forecast, is $60.7 million (55%, or $33.4 million, of which is allocated to the Power Enterprise). This project started in early 2023 and is expected to be completed in 2031.

In addition, the SFPUC has an ongoing rehabilitation and replacement program funded at approximately $1-2 million a year to continue inspections, condition assessments, design, environmental evaluations, and as-needed construction to maintain facilities along the system.

Roads and Bridges: The SFPUC is responsible for maintaining access roads to all upcountry facilities, electric transmission towers, and San Joaquin pipelines. There are approximately 14 bridges, 40 miles of paved roads, and hundreds of miles of unpaved roadways that provide access to Hetch Hetchy Project facilities. Up-country paved roads are also used by the public. Large, active capital projects associated with roads and bridges, all of which are part of the 2024 Capital Plan, include, but are not limited to the following:

- Holm Bridge Rehabilitation: Access to Holm Powerhouse is off Cherry Oil Road via the Holm Bridge. The 136-foot bridge is a three-span, continuously supported bridge that requires replacement to address seismic and current Caltrans (as defined herein) design standard deficiencies. The total budget for this project, as well as the current forecast, is $11.7 million. This project is expected to begin in 2030 and to be completed in 2036.

- Bridge Replacement: The Lake Eleanor Dam Bridge and the O'Shaughnessy Adit Access Bridge require substantial modification or re-placement. The Lake Eleanor Dam Bridge is a structural component of the dam and is integral to the structural/seismic integrity of the dam. The O'Shaughnessy Adit Access Bridge is downstream of O'Shaughnessy Dam and provides access to Canyon Tunnel. Because this project is for a Joint Facility, 55% of the project costs are allocated to the Power Enterprise. The total budget for this project, as well as the current forecast, is $29.4 million (55%, or $16.2 million, of which is allocated to the Power Enterprise). As of June 30, 2023, $2.8 million has been spent on this project (55%, or $1.6 million, of which is allocated to the Power Enterprise). This project is expected to be completed in 2027.

In addition, the SFPUC has an ongoing rehabilitation and replacement program funded at approximately $1-2 million a year to continue inspections, condition assessments, design, environmental evaluations, and as-needed construction to maintain the various roads and bridges along the system.

Other Utilities: The SFPUC is responsible for maintaining various utility-related assets along the Hetch Hetchy Project system. Large, active capital projects associated with other utilities, all of which are part of the 2024 Capital Plan, include, but are not limited to the following:

- Moccasin Wastewater Treatment Plant: The Moccasin Wastewater Treatment Plan provides primary treatment of wastewater from Moccasin Compound prior to discharging treated water to a nearby spray field. The current treatment plant was constructed in the 1970s and has been in continuous operation since its installation. It has reached the end of its reliable service life and is becoming increasingly maintenance intensive. This project will replace the existing plant with a package two-train sequence batch reactor plant, upgrade the electrical and flow monitoring system, flow equalizations, SCADA instrumentation and automation features, and related site improvements. Because this project is for a Joint Facility, 55% of the project costs are allocated to the Power Enterprise. The total budget for this project, as well as the current forecast, is $12.0 million (55%, or $6.6 million, of which is allocated to the Power Enterprise). As of June 30, 2023, $1.4 million has been spent on this project (55%, or $0.78 million, of which is allocated to the Power Enterprise). This projected is expected to be completed in 2026.

- eFleet Infrastructure Improvements: In 2017, the Board of Supervisors approved Ordinance 115-17, which required that the City's passenger vehicles transition to zero-emission vehicles, and encourages the selection of zero-emission vehicles in other classes as technology improves. This project will perform a suitability study for electrifying Hetch Hetchy Project's fleet. Based on findings, the SFPUC will determine vehicle specifications and evaluate charging infrastructure required to support the effort. Because this project jointly benefits Hetch Hetchy Water and Power Enterprise operations, 55% of the project costs are allocated to the Power Enterprise. The total budget for this project, as well as the current forecast, is $3.2 million (55%, or $1.8 million, of which is allocated to the Power Enterprise). This project is expected to begin in late 2023 and to be completed in 2025.

Hetch Hetchy Project Operations

General

The Hetch Hetchy Project provides two utility services with distinct ratepayers: water and power. Several facilities operated by Hetch Hetchy Project staff are joint assets used for both water storage and transmission and electric generation and transmission, benefitting both Hetch Hetchy Water and Power Enterprise operations. Operating and capital costs that jointly benefit both ratepayer groups are allocated 45% to the Water Enterprise and 55% to the Power Enterprise.

Water First Policy

The Hetch Hetchy Project is operated as a combined water storage and conveyance and electric generation and transmission system. The Water Enterprise and the Power Enterprise coordinate operation of the Hetch Hetchy Project to ensure reliable utility services are provided by the combined system. In accordance with State statute, the Charter and the terms of the Water Supply Agreement, the SFPUC operates the Hetch Hetchy Project pursuant to a "water first" policy to optimize the reliability and quality of its water deliveries and ensure that hydroelectric generation does not cause any reasonably anticipated adverse impact on water service. Power is generated when water is delivered to meet water system operational requirements.

Hetch Hetchy Project reservoir operations are guided by two principal objectives: collection of Tuolumne River water runoff for diversion to the Bay Area; and fulfillment of the SFPUC's downstream release obligations. To ensure water supply, Hetch Hetchy Project reservoirs remain high through the early winter, until snowmelt runoff is forecasted to fill all Tuolumne reservoirs. When the forecasted snowmelt is certain to be in excess of the fill volume, the reservoirs may be drawn down, generating electricity, without risking water supply. Similarly, the Bay Area reservoirs included in the regional water system serving San Francisco and the Water Enterprise's wholesale customers (the "**Regional Water System**") are operated to conserve watershed runoff. As such, reservoirs are drawn down early in the winter period to capture storms and reduce the potential for spilling water out of the reservoirs. In the spring, the Hetch Hetchy Project water that may be drawn down (snowmelt) is often transferred to three of the Bay Area reservoirs that can receive the water, so that any unused local reservoir storage is filled prior to July 1.

Typically, this policy requires that more water be delivered by the Hetch Hetchy Project to lower-level reservoirs in spring, when electricity prices tend to be lower than they are in the summer and fall. Therefore, in an average year, the Power Enterprise has excess generation to sell in the first half of the year and generally supplements its own generation with purchases of wholesale electricity to meet demand during the second half of the year. Nevertheless, consistent annual water needs and water deliveries create consistent "base load" electricity generation to meet almost all of the Power Enterprise's annual retail customer load requirements. In addition, reservoir levels are flexible and, to the extent possible, are strategically managed to generate power when most valuable. The Power Enterprise accounts for the costs of projected power purchases, including seasonal differential in electricity prices, in its budget and reflects such costs in the rates it charges customers. See "– Variability of Hydroelectric Generation" and "CERTAIN RISK FACTORS – Changes in Energy Prices."

Licensing and Regulation

FERC Regulation

Under the Federal Power Act, the Federal Energy Regulatory Commission ("**FERC**") is responsible for the licensing of hydroelectric plants within the United States. The Raker Act, which authorized rights-of-way on federal lands necessary for the Hetch Hetchy Project, predates the Federal Power Act. Hetch Hetchy Project hydroelectric facilities are on rights-of-way granted under the Raker Act. In addition, the Federal Power Act specifically exempts from FERC regulation those Hetch Hetchy Project facilities subject to the Raker Act. See "DEVELOPMENTS IN

THE ELECTRICITY MARKETS AND REGULATION – Federal Law and Regulation – *Federal Energy Regulatory Commission*."

Downstream from the Hetch Hetchy Project, the Districts own and operate a hydroelectric generating plant located at the Don Pedro Reservoir on the Tuolumne River (the "**New Don Pedro Project**"). The New Don Pedro Project is subject to FERC regulation and is currently undergoing re-licensing. The SFPUC has a water banking arrangement with the Districts that allows the SFPUC to "advance" water owed to the Districts to satisfy their entitlements through storage in the Don Pedro Reservoir for the Districts' later use, thus improving the water flows (and the timing of related electric generation) from Hetch Hetchy Project facilities upstream on the Tuolumne River. See "– FERC Proceeding Regarding Relicensing of the New Don Pedro Project."

California Public Utilities Commission Regulation

The CPUC establishes standards that apply to transmission and distribution facilities to ensure the safety of employees and the general public. The CPUC applies these standards to publicly-owned utilities ("**POUs**") as well as privately owned utilities, even though POUs are generally not subject to CPUC jurisdiction. The standards concern all aspects of maintaining and operating transmission and distribution facilities, including vegetation management, clearances, line-loading, inspections, and reporting.

Dam Operation; Dam Safety

In 1929, the California Legislature enacted legislation providing for supervision over non-federal dams in California. The statutes place the supervision of the safety of non-federal dams and reservoirs under DSOD jurisdiction. Dams under DSOD jurisdiction are artificial barriers, together with appurtenant work, including outlet towers that are 25 feet or more in height or have an impounding capacity of 50 acre-feet or more. Any artificial barrier not more than six feet in height, regardless of storage, or that has a capacity not more than 15 acre-feet, regardless of height, is not considered jurisdictional.

The DSOD reviews plans and specifications for the construction of new dams or for the enlargement, alteration, repair or removal of existing dams, under applications, and must grant written approval before the owner can proceed with construction. The DSOD routinely inspects operating dams to assure that they are adequately maintained. The DSOD also conducts investigations of selected dams and directs the owners to conduct additional investigations and detailed safety evaluations when necessary. DSOD dam inspection orders have included dams operated by Hetch Hetchy Water. See "– Physical Condition of Facilities – *Reservoir and Dam Facilities*."

The SFPUC has an ongoing comprehensive dam safety program to monitor, inspect and maintain dams to ensure public safety downstream. The program establishes policies, objectives and expectations relating to dam safety, including a surveillance and monitoring program. The SFPUC has adopted long-term commitments relating to the operation of its dams. Such commitments include, but are not limited to: operating dams and appurtenant structures in a manner that keeps them operationally and structurally safe; maintaining dams in a safe and non-defective condition to prevent degradation and maintain serviceability; conducting regular preventive and corrective maintenance activities; addressing nonroutine, specialized, and large-scale dam maintenance work and studies through the SFPUC's capital program; performing routine surveillance, monitoring, and reporting of dam conditions; inspecting dams once a year, as deemed necessary or prescribed by protocols; operating adit valves and emergency release valves for each dam once per year; and preparing emergency action plans for each applicable dam.

FERC Proceeding Regarding Relicensing of the New Don Pedro Project

FERC licenses the New Don Pedro Project, owned and operated by the Districts. The City helped fund the original construction of the New Don Pedro Project in exchange for a 570,000-acre-foot "water bank" account allowing the SFPUC to receive water credits for advanced releases from the Hetch Hetchy Project to the New Don Pedro Reservoir.

The current FERC license for the New Don Pedro Project expired in 2016, and the Districts are now operating under an annual license that incorporates the conditions of their prior license. The Districts initiated the process to relicense the New Don Pedro Project using FERC's Integrated Licensing Process in 2010. Relicensing is a lengthy process, stretching over several years and open to public participation. It is estimated the process may cost up to $50 million to complete, which costs are split for certain studies between the Districts and the SFPUC pursuant to an existing agreement. The Districts submitted an Amended Final License Application ("**AFLA**") for the New Don Pedro Project on October 11, 2017.

The Districts are also working through an initial licensing proceeding for the La Grange Diversion Dam (the "**La Grange Project**"), which is located on the Tuolumne River, two miles downstream of the New Don Pedro Project. The Districts also submitted their Final License Application ("**FLA**") for the La Grange Project on October 11, 2017. The City has no legal or contractual responsibilities regarding the ownership or operation of the La Grange Project and is not subject to the licensing conditions for the La Grange Project.

National Environmental Policy Act ("**NEPA**") and CEQA environmental review must be completed before licenses can be issued. On July 7, 2020, FERC released the Final Environmental Impact Statement ("**FEIS**") for both the AFLA for the New Don Pedro Project and the FLA for the La Grange Project. The FEIS presents a "staff recommendation" that is mostly aligned with the Districts' AFLA.

Under section 401 of the federal Clean Water Act, FERC cannot issue a new license for a hydroelectric project until a state's water quality agency issues a certification stating that the new license will comply with the applicable water quality requirements (the "**401 Certification**") or, alternatively, FERC determines that the state has waived its authority to issue a 401 Certification. The ongoing water quality control plan voluntary agreement process is designed, in part, to draft the terms of the 401 Certification that would be included as part of the FERC license in lieu of a requirement set forth in the "Phase 1" Amendment to the Water Quality Control Plan (the "**2018 Plan Amendment**") adopted by the California State Water Resources Control Board (the "**SWRCB**") in 2018 to release of 40% of the "unimpaired flow" on the three San Joaquin River tributaries from February through June in every water year type, whether wet, normal, dry, or critically dry. However, in January 2021, the SWRCB issued a final 401 Certification that sets a flow schedule more onerous than the 2018 Plan Amendment. The SFPUC and the Districts jointly filed a petition for reconsideration at the SWRCB in February 2021. The SWRCB did not respond to these petitions and the City and the Districts consequently filed related lawsuits challenging the 401 Certification. In addition, the Districts have challenged FERC to find that the SWRCB has waived its authority to issue a 401 Certification. Both the administrative and judicial proceedings are ongoing. The challenges to the SWRCB's issuance of the 401 Certification remain pending. The United States Court of Appeals for the District of Columbia Circuit decided the Districts' waiver lawsuit unfavorably to the Districts, and, in April 2023, the United States Supreme Court denied the Districts' petition for certiorari, fully resolving this case.

A 1995 Don Pedro Project Settlement Agreement ("**Settlement Agreement**") and a 1996 Order by FERC ("**1996 Order**") established increased water flows on the Tuolumne River to protect fisheries and riparian resources. A restoration plan ("**Restoration Plan**") adopted in 2000 guides planning, funding and implementation efforts. The Restoration Plan calls for a series of projects with a combined estimated cost of $25 million to improve river channel, riparian, and fisheries conditions within a 27-mile stretch of the Tuolumne River corridor below the La Grange Diversion Dam. Four of the ten priority projects were completed with available State and federal funding. More recently, the City and the Districts as well as other non-governmental organizations have been working on implementing additional habitat restoration projects related to the Restoration Plan.

Pursuant to a then-existing agreement between the City and the Districts, the City might have been liable to provide a portion of the increased flows mandated under the 1995 Settlement Agreement. Instead, the City and the Districts entered into a new agreement (the "**Side Agreement**") whereby the Districts agreed to provide all flows ordered by FERC to implement the Settlement Agreement until FERC issues a new license for the New Don Pedro Project in exchange for which the City pays the Districts $3.5 million per year, subject to an escalation clause applied to keep pace with inflation. Pursuant to the terms of its agreement with the Districts, the City may withdraw from the agreement upon one year's notice.

The term of the Side Agreement runs until FERC issues a new license for the New Don Pedro Project. License conditions, such as water-release requirements, could change under a new license. Changed release requirements could adversely affect the availability of Tuolumne River water to the SFPUC and incidental hydroelectric generation. To prevent these potentially adverse effects to its operations on the Tuolumne River, the SFPUC is seeking to extend the existing Side Agreement so that it would remain in effect after the New Don Pedro Project FERC license is renewed.

FERC has not yet provided a schedule for relicensing.

WECC/NERC Requirements

FERC has adopted mandatory electric reliability standards developed by the North American Electric Reliability Corporation ("**NERC**") and enforced in the western region of the United States by the Western Electric Coordinating Council ("**WECC**"). These standards require all entities that are a part of the bulk power system to demonstrate their ability to ensure reliability for all operations. The SFPUC is required to register and demonstrate compliance (or plans to mitigate non-compliance) in several operational areas. The SFPUC has established a compliance program that includes regular training of staff, systematic inspection and monitoring of operations and facilities, regular audits of compliance and mitigation plans, and regular reporting to senior management. NERC regulations are specified by operational function and require entities to register for each applicable function. The SFPUC is registered for several functions, including those applicable to transmission owners and operators and generation owners and operators. The SFPUC is audited by WECC every three years on the program. See "DEVELOPMENTS IN THE ELECTRICITY MARKETS AND REGULATION – Federal Law and Regulation – *Federal Energy Regulatory Commission*."

Variability of Hydroelectric Generation

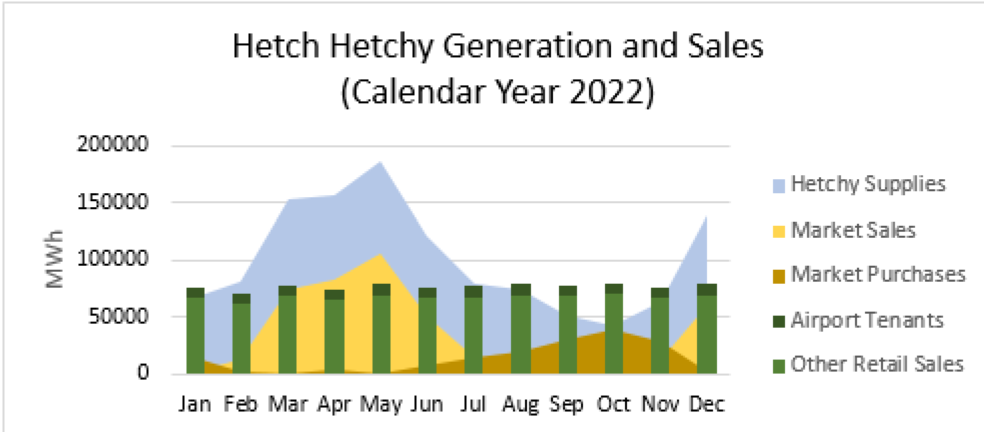
As is the case for nearly all hydroelectric generating assets, generation at the Hetch Hetchy Project is subject to annual and seasonal variations in precipitation. Typically, in the spring, hydroelectric generation at the Hetch Hetchy Project is higher than in other parts of the year as collected water and snowmelt flows through the Hetch Hetchy Project and the Regional Water System to satisfy customer draws and fill reservoirs at lower elevations, while electrical demand within the western region of the United States is generally lower than it is during most other parts of the year. Conversely, in the late summer and fall, with substantially less snowmelt and, on average, decreased precipitation, hydroelectric generation at the Hetch Hetchy Project declines due to concomitant decreases in water flow through the Hetch Hetchy Project. At the same time, electrical demand from western regional users increases. In an average year, the Power Enterprise has excess generation to sell in the first half of the year, and generally purchases wholesale electricity during the second half of the year to meet its load obligations. See "– Hetch Hetchy Project Operations – *Water First Policy*" and "CERTAIN RISK FACTORS – Changes in Energy Prices."

Due to the critically dry period from October 2019 to September 2021, the SWRCB issued a curtailment order in August 2021 restricting the SFPUC's ability to capture inflow to its reservoirs which feed the Kirkwood, Moccasin and Holm powerhouses. The curtailment order forced a shift in generation from fall to winter months, at release rates which likely exceeded generator capacities and reduced the SFPUC's total annual generation from these powerhouses. The curtailment order impacted generation operations from August 2021 through mid-November 2022. The curtailment order was rescinded in April 2023.

Water Year 2023 has been well above normal for both precipitation and snowpack. As of September 5, 2023, Water Year 2023 precipitation for the upcountry area totals approximately 61.9 inches, which is 168.8% of normal annual total, and Water Year 2023 precipitation for the local area totals approximately 44.3 inches, which is 194.4% of normal annual total. Storage at the Hetch Hetchy Reservoir as of September 5, 2023 was approximately 99.5% of the maximum storage capacity of 360,360 acre-feet.

The SFPUC anticipates that purchased power costs in Fiscal Year 2023-24 will be higher than in prior years due to various market forces. See "CERTAIN RISK FACTORS – Risks Related to Power Enterprise Facilities and Operations – *Water System Operation Requirements*," "– Increased Operation and Maintenance Expenses," "– Changes in Energy Prices," and "– Uncertainties of Projections, Forecasts and Assumptions."

The following graph shows Hetch Hetchy Project generation and sales for calendar year 2022.

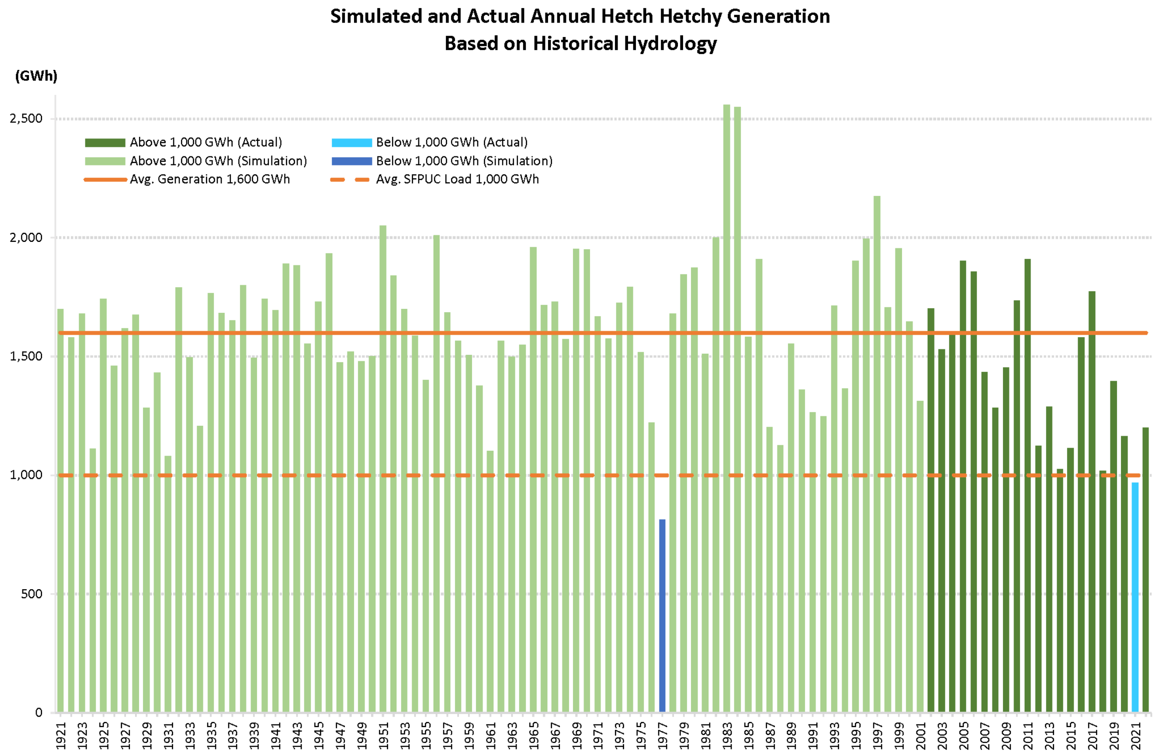


Note: These load data figures do not include Treasure Island/Yerba Buena Island, whose power is not obtained from the Hetch Hetchy Project.
Source: SFPUC.

Over the past 10 years, the Hetch Hetchy Project generated an average of 1,253,000 MWh per year, with an average of 744,000 MWh generated in the first six months (January-June) to satisfy average customer load of 471,000 MWh during the same period, and an average of 508,000 MWh generated in the second six months (July-December) to satisfy average customer load of 481,000 MWh during the same period.

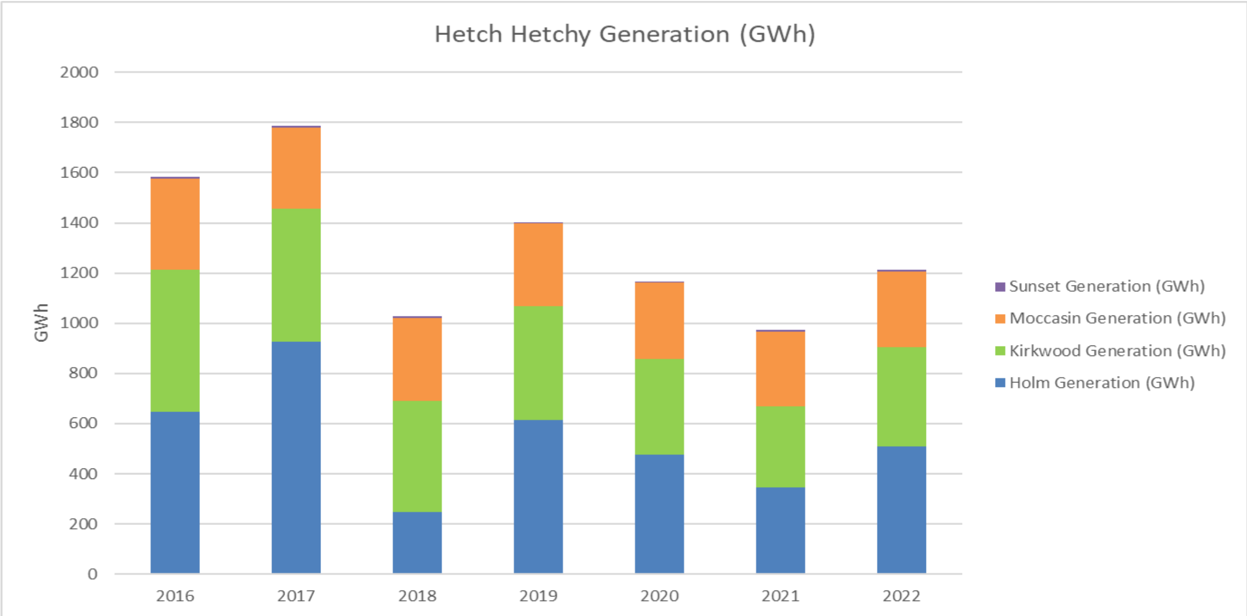
Precipitation conditions also vary on an annual basis. The Hetch Hetchy Project is geographically located in an environment subject to periodic drought conditions. Since 1921, seven multi-year droughts have been recorded in the Hetch Hetchy Project area. The Tuolumne Basin was recently in a drought from water years 2020 to 2022, the second driest three-year period on record. During dry years in the Hetch Hetchy Project area, the share of purchased power as a percentage of Power Enterprise customers' load increases. Because of the prevalence of hydroelectric generating resources in the western and particularly northwestern portions of the United States, regional drought conditions of the type experienced in such regions in water years 2013 and 2014 can also impact the overall cost of purchased power. The SFPUC cannot predict when drought conditions will begin or end, or the frequency or severity of any future drought conditions.

Had current system generation been in place throughout the past 93 years, models indicate the Hetch Hetchy Project would have produced an annual maximum generation of approximately 2,500,000 MWh (in a wet year similar to a year like 1983) and a minimum of approximately 900,000 MWh (in a critically dry year similar to a year like 1977), while currently serving an average retail customer load of 1,000,000 MWh. With climate change, Hetch Hetchy Project generation has decreased since 2000, and is estimated at about 1,250,000 MWh of electricity annually. Even during drought conditions, the Hetch Hetchy Project has frequently generated enough electricity to meet its retail load obligations, but had less excess generation available for wholesale sales, effectively reducing revenues from wholesale market transactions. See "THE POWER ENTERPRISE – Load and Electricity Supply Resource Management; Wholesale Electricity Trading." The following graph shows simulated and actual annual generation of the Hetch Hetchy Project applying current system generation capability to historical hydrology since 1921. This interannual variability is expected for this area and is an expected consequence of climate change. The Power Enterprise continues to meet its load obligations through supplemental wholesale power purchase.



Source: SFPUC.

The following graph shows the Hetch Hetchy Project generation by powerhouse from 2016 through 2022. The Power Enterprise continues to meet its load obligations through supplemental wholesale power purchase.



Source: SFPUC.

Safety and Security

The safety and security of Hetch Hetchy Project facilities is maintained via a combination of regular inspections by SFPUC employees, electronic monitoring and analysis of unusual incident reports. Most above-ground facilities operated and maintained by the SFPUC are controlled-access facilities with fencing, signage and gates. Additionally, closed circuit television surveillance systems and security officers may be deployed at certain times, as dictated by the security situation, the City, and federal requirements. Smaller, above ground and subterranean pumping stations operated and maintained by the SFPUC are locked with padlock or internal locking mechanisms, and most are monitored via access/intrusion alarms and are also regularly inspected by SFPUC employees. Security requirements are frequently inspected, evaluated and audited in accordance with current policies and procedures. Improvements to the current security system are continually evaluated as changes in technology or threats occur. The electronic operations and controls have been evaluated and designed to reduce exposure using a series of technology systems enhancements and integration in accordance with the SFPUC's security design procedures.

Wildfire Considerations

Wildfire Mitigation Plan

The CPUC created the Fire-Threat Map for California (the "**Fire-Threat Map**"). The Fire-Threat Map shows areas where there is an increased risk for utility associated wildfires and where utility infrastructure and operations will have stricter fire-safety regulations. The Fire-Threat Map is comprised of the High Fire Threat District, which is made up of two maps: Tier 1 High Hazard Zones ("**HHZs**") and Tier 2 and Tier 3 fire-threat areas. Tier 1 HHZs, based on the United States Forest Service and California Department of Forestry and Fire Protection joint map of Tree Mortality, are zones near communities, roads, and utility lines, and are a direct threat to public safety. Tier 2 fire-threat areas outline areas where there is a higher risk (including likelihood and potential impacts on people and property) from utility related wildfires. Tier 3 fire-threat areas outline areas where there is an extreme risk (including likelihood and potential impacts on people and property) from utility related wildfires.

The SFPUC owns and operates about 94 miles of overhead electrical lines that are located within the CPUC's Tier 1 HHZs. The lines are primarily located in the Sierra Nevada, surrounding foothills and on the Peninsula. The Hetch Hetchy Project and electric transmission and other facilities operated by Hetch Hetchy Project staff are primarily located in the Sierra Nevada and surrounding foothills, where wildfire is a risk, especially within the Stanislaus National Forest.

The Hetch Hetchy Project has both power transmission and distributions lines within certain high fire-threat areas. Approximately 26% (42.6 miles) of the transmission lines are in Tier 2, and 2% (3.3 miles) of the transmission lines are in Tier 3. The remaining 72% of the transmission lines are outside of the High Fire Threat District. All Hetch Hetchy Project distribution lines are in Tier 2 (approximately 39 miles).

As required by the CPUC, the SFPUC maintains a Wildfire Mitigation Plan (the "**Wildfire Mitigation Plan**") which describes the numerous programs that the SFPUC has in place to construct, maintain and operate its electrical facilities in order to minimize the risk that its equipment could be the origin or contributing source for a catastrophic wildfire. The Wildfire Mitigation Plan is reviewed by an independent evaluator, approved by the SFPUC Commission, and submitted to the California Wildfire Safety Advisory Board on or before July 1, of each year. The SFPUC's Wildfire Mitigation Plan was most recently reviewed by an independent evaluator, Zaragoza Consulting, Inc., in 2023, who determined that the SFPUC's Wildfire Mitigation Plan is comprehensive and meets the statutory requirements of Section 8387 of the California Public Utilities Code for publicly owned electric utilities. The California Wildfire Safety Advisory Board is expected to publish its guidance advisory opinions for recently submitted wildfire mitigation plans in late 2023.

Impact of Wildfires on the Power Enterprise

Wildfires can adversely impact the Power Enterprise in two distinct ways. First, wildfires can damage Hetch Hetchy Project facilities and disrupt the operation of, or cause damage to, electric generation and transmission facilities. As one example, in 2013, the Rim Fire, one of the largest wildfires on record in the Sierra Nevada, burned over 257,135 acres. The Rim Fire passed through an area containing two of the Hetch Hetchy Project's electric generating stations, the Kirkwood and Moccasin Powerhouses, which combined generate approximately 57% of the electricity produced by the Hetch Hetchy Project, and reached the southern edge of the Hetch Hetchy Reservoir, which supplies 85% of San Francisco's drinking water. Other critical infrastructure, including electricity transmission and distribution lines, switch yards, and structures, was in the wildfire's direct path prior to full containment in October 2013. The Rim Fire inflicted approximately $40 million in damages to the Hetch Hetchy Project and other facilities in the Sierra Nevada region. The Hetch Hetchy Project electric generation system was also interrupted by the effects of the Rim Fire for a period of 43 days. To serve its retail load and maintain safety and reliability during this period, the SFPUC purchased power on the open market, including using existing banked electricity with PG&E. The total cost to the SFPUC of such power purchases and banked power usage was approximately $1.7 million. The SFPUC is pursuing cost recovery to recoup losses through the Federal Emergency Management Agency's and the State of California Governor's Office of Emergency Services' Public Assistance Grant programs, as well as purchased property insurance coverage for mission critical assets. To date, the SFPUC has made progress in recovering most costs related to the power purchases through insurance and is working towards collecting further reimbursements for damages caused by the Rim Fire. See "FINANCIAL OPERATIONS – Risk Management and Insurance." Endpoint delivery of electricity to Power Enterprise retail and wholesale customers remained unaffected and the Rim Fire did not have an adverse impact on drinking water quality, despite some ash having been observed falling into the Hetch Hetchy Reservoir.

Second, wildfires attributable to Hetch Hetchy Project facilities may result in liability for damage to private property. For more information, see "CERTAIN RISK FACTORS – Inverse Condemnation."

The SFPUC participates in a City-wide purchased insurance policy which provides up to $1 billion of coverage against certain losses with respect to scheduled property. Such scheduled property includes certain properties of the City and its departments, including, but not limited to, the SFPUC's enterprises which alone total approximately $2.8 billion. The Power Enterprise has included on the insurance schedule the Kirkwood and Holmes Powerhouses, the Intake and Calaveras Switchyards the Warnerville Substations, certain penstocks and a number of other facilities with a total combined value of approximately $986 million. This purchased insurance policy generally does not cover any power transmission or distribution lines and does not cover any third-party liability in connection with wildfires, all of which are instead included in the SFPUC's self-insurance program. For more information about the SFPUC's risk management program, which encompasses both self-insured and insured coverage, see "FINANCIAL OPERATIONS – Risk Management and Insurance."

Wildfire Mitigation Strategies

As set forth in the Wildfire Mitigation Plan, the SFPUC has evaluated prevention and response strategies and established capital projects designed to mitigate the threat of wildfire posed by overhead electrical lines. Such projects, which are part of the SFPUC's ongoing replacement and rehabilitation program related to wildfire mitigation efforts, include (i) reconductoring, increasing safe-clearance distances, undergrounding, and adding alternative power supplies in some areas designated by the CPUC as High Fire Threat District zones to reduce the Hetch Hetchy Project's overhead electrical line footprint, and (ii) developing fire breaks near and/or around other facilities, which will require clearing certain amounts of vegetation on either side of identified access rounds to ground level and is expected to include herbicide treatments to prevent re-growth as part of periodic maintenance. The ongoing replacement and rehabilitation program is funded at approximately $2.0 million a year to provide condition assessments, design, environmental evaluations, and construction.

In addition, another one of the SFPUC's wildfire mitigation strategies set forth in the Wildfire Mitigation Plan is de-energization during critical fire weather conditions. The SFPUC owns two water treatment plants, Sunol Valley Water Treatment Plant (the "**SVWTP**") and Harry Tracy Water Treatment Plant (the "**HTWTP**"). SFPUC transmission lines feed the SVWTP. In the event SFPUC must de-energize the transmission lines that feed the SVWTP, the portion of the transmission system outside of the de-energization zone can be back fed from the PG&E electrical grid. In the event of both public safety power shutoffs ("**PSPS**") by PG&E and SFPUC de-energization, SVWTP operates on backup generation. Unlike SVWTP, which is connected to SFPUC transmission lines, the Power Enterprise serves the HTWTP under a transmission service agreement with PG&E. Backup generation is available at the HTWTP in the event of a PG&E PSPS event.

Winter Storms in Fiscal Year 2022-23

Early winter storms at the end of 2022 and beginning of 2023 caused damage to some Hetch Hetchy Project facilities. The storms damaged multiple water and joint assets on the Hetch Hetchy Water and Power system, with most of the damage occurring to paved and unpaved access roads. The SFPUC continued to deliver high-quality drinking water to its retail and wholesale customers throughout the storm events, and power generation and transmission continued uninterrupted. Watershed roads in Tuolumne, Alameda, and San Joaquin counties experienced erosion, sinkholes and slides and are awaiting repairs for access to be reestablished. Under the terms of the Raker Act, Hetch Hetchy Water and Power is responsible for maintenance of certain right of way roads. Two of these roads, Cherry Lake Road and Hetch Hetchy Road, experienced complete and partial road failures, and an emergency contract in the amount of $11.5 million has been awarded to complete the necessary repairs prior to the next winter storm season. Hetch Hetchy Project crews were able to maintain access to critical facilities throughout the storm events. Additional reported damages include erosion adjacent to the headgate structure of the Early Intake Dam and damage to the Moccasin Creek bypass pipe.

The SFPUC anticipates that both short- and long-term capital projects will be required to rebuild roads and complete repairs to damaged facilities. Total cost of damages is expected to be at least $40 million; however, final costs will not be known until at least 2024. The SFPUC anticipates it will be able to pay such costs from reserves, revenues of the Power Enterprise and Water Enterprise, and/or proceeds of existing Power Enterprise and Water Enterprise bonds. The City has applied for federal and State disaster relief funding, and the SFPUC plans to seek reimbursement for qualified expenses.

THE POWER ENTERPRISE

General

The SFPUC has provided electricity services to retail customers and California irrigation districts since the 1920s in accordance with the terms of the Raker Act. Pursuant to the Raker Act, the City developed a system of hydroelectric facilities, transmission facilities and other electric utility infrastructure to serve its customers. See "THE HETCH HETCHY PROJECT." The City also built and owns certain transmission and distribution facilities that are not part of the Hetch Hetchy Project. Since at least 1945, the SFPUC has purchased transmission and distribution services from PG&E through a FERC-approved wholesale agreement to transmit and deliver electricity to its City customers.

In 2005, as part of an agency-wide reorganization, the SFPUC created the Power Enterprise as a separate electric utility enterprise to complement the Water and Wastewater Enterprises. Although the Power Enterprise is functionally organized as a separate enterprise within the SFPUC's overall structure, the Hetch Hetchy Project is operated as a combined water storage and conveyance and electric generation and transmission system. See also "INTRODUCTION – The San Francisco Public Utilities Commission and the Power Enterprise" and "THE HETCH HETCHY PROJECT."

In 2016, the SFPUC began serving customers through CleanPowerSF, a Community Choice Aggregation program. Under CleanPowerSF, the SFPUC pools the electricity demands of San Francisco residents and businesses that are retail electric distribution customers of PG&E for the purpose of buying electricity on behalf of such customers. CleanPowerSF is a "Separate System" under the Indenture.

The Power Enterprise schedules, purchases, sells, transmits and distributes electricity to meet the needs of more than 6,000 retail and wholesale accounts, currently representing 19% of the total electricity consumed within San Francisco (with 58% provided by CleanPowerSF and the remaining 23% by PG&E and electricity service providers through a State-authorized direct access program). The Power Enterprise's customers include:

- municipal departments, including the City's fire houses, hospitals, municipal transit rail system, water and wastewater treatment facilities, SFO, recreational facilities, maritime facilities, public housing and City streetlights and traffic signals;

- the SFUSD;
- tenants in City-owned properties, including tenants of the Port and SFO;
- the Hunters Point Shipyard Phase I redevelopment project and tenants of TIDA on the former Naval Station Treasure Island and Yerba Buena Island;
- other new developments including Mission Rock and Pier 70;
- SF Housing Authority, Rental Assistance Demonstration projects; and
- commercial customers and developments including the Salesforce Transit Center in downtown San Francisco, and Digital Realty, a data center transferred from PG&E retail service to the Power Enterprise.

The Power Enterprise also owns, operates and maintains half of the streetlights in San Francisco and supplies electricity to the other half, which are owned and maintained by PG&E.

The Power Facilities include the power-related assets of the Hetch Hetchy Project, 25 solar arrays and two biogas facilities, transmission lines, and numerous distribution facilities. The Power Enterprise currently has 136 full-time positions, an operating budget of $220.4 million for Fiscal Year 2023-24, and a capital budget of approximately $41.9 million for power facilities and the power portion of combined water and power facilities. The Power Enterprise's revenues for Fiscal Years 2021-22 and 2020-21 were approximately $185.0 million and $155.7 million, respectively. Power Enterprise revenues currently support approximately 80% of the SFPUC's costs of operating the Hetch Hetchy Project, including maintenance and capital improvements relating to the Hetch Hetchy Project. See "THE HETCH HETCHY PROJECT – Hetch Hetchy Project Operations" and "FINANCIAL OPERATIONS."

Power Service in San Francisco

San Francisco's electricity needs are met by four primary providers. CleanPowerSF is currently the largest supplier of electricity in San Francisco, serving approximately 58% of the total load within San Francisco. In addition, approximately 19% of the total load within San Francisco is currently supplied by the Power Enterprise, and the remaining 23% is supplied by PG&E and electricity service providers through a State-authorized direct access program. The above percentages include electricity usage for all of San Francisco and SFO, which is located outside San Francisco city boundaries in unincorporated San Mateo County and served by the SFPUC. In 2008, the City established a goal to have greenhouse gas ("**GHG**")-free electric service by 2030, to be realized in part by generating, deploying and procuring all of the SFPUC's electricity needs from renewable and zero-GHG electric energy sources. PG&E is currently the dominant provider of distribution services in San Francisco, with SFPUC owning the distribution system serving The Shipyard development (the Hunters Point Shipyard Phase I redevelopment project), and portions of the distribution system serving the Treasure Island and Yerba Buena Island development.

The SFPUC is commissioning and testing an SFPUC-owned transmission and electrical distribution facility along the Bayside of San Francisco, known as the Bay Corridor Transmission and Distribution ("**BCTD**") project, in support of the Power Enterprise's long-term business plan of owning in-city distribution to provide electric service to existing and future customers in San Francisco. The BCTD project consists of (i) a 230 kV underground transmission line, (ii) a 15 kv distribution system and (iii) a 75 megavolt-amperes 230/15 kV substation. The BCTD project is interconnected with PG&E at the Potrero Substation at 230 kV. The SFPUC will own the 230 kV transmission line from the Potrero Substation to the BCTD distribution substation, the Davidson Substation, where the voltage is transformed to 12.47 kV for delivery to customers. The BCTD will serve retail customers along the southeastern waterfront of San Francisco, including the Pier 70 development, the Mission Rock development, the Southeast Treatment Plant, the UCSF clinic and garage, the Mariposa pump station, the Southeast Community Center and the Water Enterprise's new City Distribution Division facility. The BCTD is expected to be on-line by the end of 2023.

Pacific Gas & Electric Company

Incorporated in California in 1905, PG&E is a for-profit, investor-owned natural gas and electric utility company, with a service area in California that extends from Eureka in the coastal north to Bakersfield in the south, and from the Pacific Ocean in the west to the Sierra Nevada in the east, although portions of the area are served by other for-profit investor-owned utilities and municipally-owned utilities. PG&E moved its headquarters from San Francisco to Oakland, California in 2022. While PG&E is the largest provider of electric distribution services within San Francisco, the Power Enterprise and CleanPowerSF together now provide approximately 77% of the electricity consumed in San Francisco.

PG&E is regulated primarily by the CPUC and FERC. The CPUC has jurisdiction over the rates and terms and conditions of service for PG&E's retail electricity and natural gas distribution operations, electric generation, and natural gas transportation and storage. FERC has jurisdiction over the rates and terms and conditions of service governing PG&E's electric transmission operations, interstate natural gas transportation contracts and Wholesale Distribution Tariff (the "**Tariff**") services. The federal Nuclear Regulatory Commission oversees the licensing, construction, operation, and decommissioning of PG&E's nuclear generation facility. PG&E is also subject to the jurisdiction of other federal, State, and local governmental agencies in certain matters.

The SFPUC interfaces with PG&E in multiple ways, as described below.

- The Power Enterprise is a wholesale customer of PG&E for transmission and distribution services within San Francisco. In Fiscal Years 2021-22 and 2022-23, the Power Enterprise paid PG&E approximately $22.3 million and $29.0 million, respectively, for its distribution services. The Power Enterprise is also a customer of PG&E streetlight services, and currently pays PG&E approximately $1.9 million per year to operate and maintain the 17,925 PG&E-owned streetlights in San Francisco. While the SFPUC pays PG&E directly for wholesale distribution services, it pays California Independent System Operator ("**CAISO**") tariffed "postage stamp" rates for transmission services on PG&E owned transmission lines. The Power Enterprise provides electricity for streetlights, traffic signals and certain unmetered loads in San Francisco. See "FINANCIAL OPERATIONS – Rate-Setting Process; Rates – *PG&E Retail Rates*" and "CERTAIN RISK FACTORS – Risks Related to Power Enterprise Operations and Facilities – *Interconnection Delays and Costs*."

- *Power Distribution, Metering and Billing for CleanPowerSF*. PG&E also provides metering, data transfer and billing services to CleanPowerSF, pursuant to State statute implemented through rules and regulations adopted and enforced by the CPUC. PG&E provides retail transmission and distribution services and consolidated billing services to CleanPowerSF customers. CleanPowerSF customers pay PG&E for all electric services charges (generation, transmission and distribution) and PG&E transfers customer payments received for CleanPowerSF electric generation service to the SFPUC.

- *Regulator*. The franchise agreements between the City and PG&E, approved by the Board of Supervisors on December 26, 1939, grant PG&E non-exclusive franchises to provide electric and gas service in San Francisco and authorize use of public rights-of-way in connection therewith. The City, including the SFPUC, regularly issues permits to PG&E for work on or use of City property to improve its systems. For example, PG&E is a permitted user of some of the SFPUC's watershed lands.

- *Competitor to Power Enterprise*. Neither the Raker Act nor PG&E's franchise agreements impose any limitations on the City's ability to serve retail electric customers. The SFPUC and PG&E compete to serve load and offer competing products. The Power Enterprise provides bundled electric services through the Power Enterprise's publicly owned utility and provides generation services through CleanPowerSF. Both business lines provide other services such as distributed energy resources, decarbonization and energy efficiency services.

PG&E filed for Chapter 11 bankruptcy on January 29, 2019, and subsequently emerged from bankruptcy on July 1, 2020. In connection with PG&E's bankruptcy, the City submitted a non-binding indication of interest to

PG&E to purchase substantially all of PG&E's electric distribution and transmission assets needed to provide retail electric service to all electricity customers within the geographic boundaries of San Francisco. The City subsequently submitted additional non-binding indications of interest to PG&E in September 2020 and May 2023. A transaction has not been consummated to date. The City remains interested in acquiring these assets from PG&E. For more information, see "THE PUBLIC UTILITIES COMMISSION – Proposed Transaction with Pacific Gas & Electric Company."

Electric Service Providers (Direct Access)

Direct access service in California was established following the restructuring of California's electric industry in 1998 through Assembly Bill 1890 (1996) ("**AB 1890**") and allows qualified large investor-owned utility customers to purchase their electricity directly from qualified suppliers through bilateral contracts, subject to utility-specific load caps. The investor-owned utility continues to be responsible for transmission and distribution under CPUC tariffs. None of the Power Enterprise's customers are eligible to participate in the State's direct access program as the program is only available to investor-owned utility retail customers.

CleanPowerSF Service

The Power Enterprise is responsible for the operation of CleanPowerSF, a Community Choice Aggregation program. Under CleanPowerSF, the SFPUC pools the electricity demands of many San Francisco residents and businesses that are retail electric distribution customers of PG&E for the purpose of buying electricity on behalf of such customers. CleanPowerSF, which currently serves over 380,000 accounts, gives residential and commercial electricity consumers in San Francisco a choice of having their electricity supplied from clean renewable sources, such as solar, wind, and geothermal, at competitive rates. CleanPowerSF offers three products: the default "Green" product comprised of at least 50% RPS-eligible renewable energy; the "SuperGreen" product comprised of 100% RPS-eligible renewable energy; and the "SuperGreen Saver" product comprised of 100% RPS-eligible renewable energy in which eligible low-income customers receive a 20% bill discount. As required by State law, CleanPowerSF is an opt-out program and customers can choose to use CleanPowerSF or stay with PG&E's existing generation service. Since the SFPUC began serving customers through CleanPowerSF in 2016, the program has maintained an approximately 96% participation rate, or an approximately 4% opt-out rate.

CleanPowerSF is a "Separate System" under the Indenture. CleanPowerSF cannot provide service to Power Enterprise customers; under State law, CCAs cannot operate within the service areas of local publicly owned electric utilities.

Power Enterprise Service

The Power Enterprise is responsible for the marketing, sale, transmission, and delivery of all the clean energy products produced by the Hetch Hetchy Project and other power produced by the SFPUC. The Power Enterprise balances that supply with purchases or sales to meet customer demand. The Power Enterprise distributes, meters, provides outage response and call center services and prepares the electric bills for its customers, comprised of City offices, facilities and their tenants, ranging from neighborhood police stations and fire houses, the Ferry Building, and City Hall, to SFO, Zuckerberg San Francisco General Hospital and Trauma Center, wastewater pumping and treatment facilities, the Regional Water System facilities, and the SFMTA. The Power Enterprise is also the full-service electricity provider to new developments like The Shipyard, The Bristol, and the Salesforce Transit Center. The Power Enterprise also provides gas and electric services to former Naval Station Treasure Island, by agreement with TIDA. See "– Power Enterprise Customers." The Power Enterprise operates and maintains many miles of distribution system to provide reliable electric service to its customers.

The Power Enterprise provides the full complement of electricity services to its customers, which includes implementing energy efficiency improvements and on-site renewable power generation, and operating programs to encourage customer actions like reducing usage on high demand days to help with system reliability, and rebates for customer investment in clean technology. The Power Enterprise has developed, owns and maintains 3.525 MW of rooftop solar projects. The Power Enterprise has also developed certain in-city solar generation and methane gas-fired co-generation facilities. See "– Power Supply Resources." The Power Enterprise owns, operates, manages and maintains approximately half of all streetlights and related circuitry throughout San Francisco.

The Power Enterprise's operations and planning are guided by several policy objectives, including:

- Ensuring compliance with the Raker Act;
- Preserving the ability to operate, maintain, repair and improve SFPUC-owned facilities and providing safe and reliable electric service;
- Maximizing the value received from Hetch Hetchy Project electricity supply; and
- Continuing to support other valuable City and community goals, such as reducing the City's carbon footprint, increasing the reliability of the City's electricity supply, and encouraging conservation and sustainable technologies.

Power Supply Resources

The Power Enterprise meets its customers' electricity requirements with a combination of (1) generation from the SFPUC-owned Hetch Hetchy Project, (2) generation at renewable projects in San Francisco owned by the Power Enterprise and (3) market purchases. See "THE HETCH HETCHY PROJECT."

The Power Enterprise portfolio is comprised of approximately 416.6 MW of renewable electricity generating capacity, as set forth in the following table, serving approximately 150 MW of retail load.

TABLE 7
POWER GENERATION RESOURCES

Hetch Hetchy Project Large Hydro (96% of Total)

Powerhouse	Capacity (MW)	Units
Holm	170	2
Kirkwood	125	3
Moccasin	110	2
Total	405	7

Other Renewable (4% of Total)

Source	Capacity (MW)
Solar (local)	8.5
Biogas (local)	3.1[1]
Total	11.6

[1] A majority of the current power generation is expected to be taken offline when the P3 Biogas Utilization Project is completed. See "– Solar, Biogas, Wind" below.
Source: SFPUC.

Solar, Biogas, Wind

In addition to the generation resources of the Hetch Hetchy Project, the Power Enterprise has developed, owns, and maintains 3.525 MW of rooftop solar projects on property in San Francisco. Solar generation capacity is distributed among the 28 municipal solar installations listed in the following table.

TABLE 8
SOLAR GENERATION RESOURCES

Project	Date Online	Location	Output
1. Moscone Convention Center	Mar. 2004	747 Howard St.	676 kW
2. Southeast Wastewater Treatment Plant	Oct. 2005	750 Phelps St.	255 kW
3. Maxine Hall Neighborhood Medical Center	Dec. 2007	1301 Pierce St.	32 kW
4. North Point Wet-Weather Facility	Dec. 2007	111 Bay St.	241 kW
5. City Distribution Division	Dec. 2007	1990 Newcomb Ave.	134 kW
6. Chinatown Public Library	Jan. 2008	1135 Powell St.	10 kW
7. San Francisco International Airport	Mar. 2008	Terminal 3	456 kW
8. MUNI Maintenance Yard	Oct. 2011	1095 Indiana St.	106 kW
9. Chinatown Public Health Center	Nov. 2011	1490 Mason St.	24.5 kW
10. Tesla Water Treatment Facility	Mar. 2012	Tracy, CA	32 kW
11. SFPUC Headquarters	Jun. 2012	525 Golden Gate Ave.	164 kW
12. Alvarado Elementary School	Nov. 2012	625 Douglass St.	50 kW
13. MUNI Ways and Structures	Sep. 2013	700 Pennsylvania Ave.	101 kW
14. Louise M. Davies Symphony Hall	Mar. 2014	201 Van Ness Ave.	182 kW
15. North Beach Library	Jul. 2014	850 Columbus Ave.	11.7 kW
16. Thurgood Marshall High School	Jun. 2015	45 Conkling St.	87.3 kW
17. SF City Hall	Jul. 2015	1 Carlton B Goodlett St	82 kW
18. Cesar Chavez School	Mar. 2016	825 Shotwell St	53.7 kW
19. Downtown High School	Aug. 2016	693 Vermont St.	47 kW
20. Starr King Elementary School	Aug. 2019	1215 Carolina St.	32 kW
21. Burton High School	Dec. 2019	400 Mansell St.	141 kW
22. South Van Ness Ave.	Oct. 2020	49 South Van Ness Ave.	68 kW
23. SFPD Academy	Dec. 2020	350 Amber Drive	156 kW
24. Visitacion Valley Middle School	Aug. 2021	1971 Visitacion Ave	98 kW
25. Opera House Solar	Jan. 2022	301 Van Ness Ave.	90 kW
26. Southeast Health Center	Dec. 2022	2403 Keith St.	72 kW
27. Marina Middle School	April 2023	3500 Fillmore St.	52 kW
28. Alameda Creek Watershed Center	July 2023	Sunol, CA	71 kW

Source: SFPUC.

In addition, the Power Enterprise partnered with Duke Energy, a private solar developer, to build a large-scale, local solar facility on the SFPUC's Sunset Reservoir. The facility achieved commercial operation in November 2010. The Power Enterprise has entered into a long-term power purchase agreement for the output of this 5 MW Sunset Solar Generating Project. See "OBLIGATIONS PAYABLE FROM REVENUES – Power Purchase Agreements" and "*– Power Purchases*."

The Power Enterprise expects to install additional solar assets as part of its solar portfolio. Generally, the Power Enterprise aims to install two-to-three new solar assets with 150-300 kW of output every Fiscal Year, subject to its ability to identify suitable rooftop space in a dense urban environment and buildings that can structurally support a roofing system that can accommodate a new solar electric system.

The SFPUC also operates two biogas generation facilities, located at the Wastewater Enterprise's Southeast and Oceanside Wastewater Treatment Plants, with a combined capacity of approximately 3.1 MW or approximately 1% of the Power Enterprise's aggregate generation capacity. Such facilities generate clean, renewable energy from the gas byproducts of the wastewater decomposition process. Currently, the biogas from the digesters at the Southeast Treatment Plant is used to produce heat and power to support a portion of the plant operation. The Wastewater Enterprise is currently pursuing a P3 Biogas Utilization Project intended to develop new facilities to treat and upgrade biogas from Southeast Treatment Plant digesters to natural gas quality and sell the biogas and related energy credits. Such sales would not be undertaken by the Power Enterprise or result in additional Power Enterprise Revenues. As a result of this change in end use of the biogas, the Wastewater Enterprise will require additional power from Power Enterprise and natural gas from PG&E to replace that previously provided by the existing digester biogas, and to support a new Southeast Plant Biosolids Digester Facilities which is targeted for substantial completion in late 2027.

Power Purchases

The Power Enterprise supplements its resource portfolio with long-term and short-term power purchases to meet retail customer demand. The SFPUC has entered into several long-term power purchase agreements to help meet its electricity requirements:

- <u>*Western Area Power Administration*</u> – The SFPUC has entered into a long-term power agreement with the Western Area Power Administration ("**WAPA**") wherein WAPA provides supplemental power and portfolio management services for customer needs on Treasure Island and Yerba Buena Island. Through the agreement, WAPA provides full load service and scheduling coordinator services for Treasure Island and Yerba Buena Island. The contract allocates a percentage of WAPA's base resources and supplemental electricity to the SFPUC to meet the existing needs of Treasure Island and Yerba Buena Island. Additionally, the WAPA agreement provides for transmission access on the Central Valley Project Transmission System for such allocation. The contract expires on December 31, 2054.

- <u>*Sunset Reservoir Photovoltaic*</u> –The SFPUC has entered into an agreement with Duke Energy to finance, construct, own, operate and maintain a 5 MW solar photovoltaic generating plant on the rooftop of the SFPUC-owned North Storage Basin Reservoir and certain adjacent land on the Sunset Reservoir property and to sell all electricity generated by such project to the SFPUC though a 25-year power purchase agreement that expires in November 2035. The power purchase agreement provides that the SFPUC will purchase all electricity produced by the Sunset Solar Generating Project at specified contract prices. The contract provides an option for the SFPUC to buy the solar facility at a predetermined price after 15 full years from the actual commercial operation date (which occurred in November 2010) and upon the expiration of the agreement, all subject to the terms of the agreement.

When electricity from its owned generation resources and long-term purchased power are not sufficient to meet electricity demand, the Power Enterprise supplements its resources with medium- and short-term power purchases through month-ahead, day-ahead and spot purchases on the CAISO market. All market purchases are subject to established risk management practices and guidelines, including trading limits and counterparty credit requirements.

Wholesale Electricity Sales

The Raker Act grants the City the right to develop generation as part of the Hetch Hetchy Project and to sell electricity for beneficial use, first to meet San Francisco municipal needs, then the Districts' municipal and agricultural pumping needs, and finally for commercial purposes. The Raker Act does not limit the type of commercial end-use customer that SFPUC may supply; electricity may be sold to any retail/commercial end-use customer. However, such electricity may not be sold to a private corporation or individual for resale. Excess Hetch Hetchy Project electricity has generally been sold to other public utilities, the CAISO, and CCAs.

In 1988, the SFPUC entered into a long-term power sales agreement with the Districts. The SFPUC subsequently amended the terms of the agreement with each of the Districts. The agreement with MID was renegotiated in 2008 to remove the Power Enterprise's obligation to provide firm power to MID and to modify MID's rights to excess electricity from the Hetch Hetchy Project by requiring MID to pay reasonable prices for such electricity when available. The SFPUC's agreement with MID expired on June 30, 2015, and was subsequently extended through December 31, 2017. In 2005, the SFPUC amended the terms of the agreement with TID. The amended agreement between the SFPUC and TID terminates the Power Enterprise's obligation to provide TID firm power at below market costs. The SFPUC's agreement with TID also expired on June 30, 2015, and was subsequently extended through December 31, 2017. Although the agreements with MID and TID have expired, they have not been terminated. See "FINANCIAL OPERATIONS – Rate-Setting Process; Rates – *Contractual Rate-*

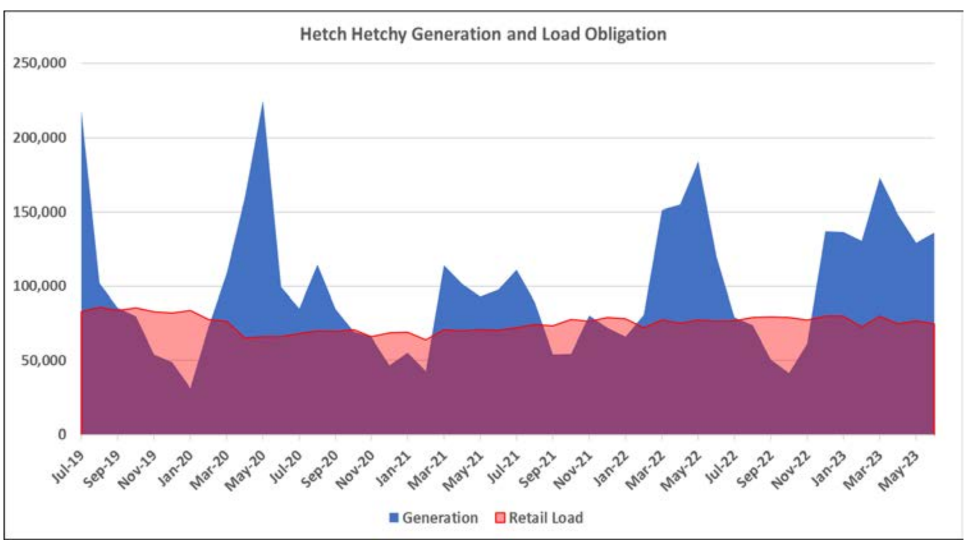
Setting Actions." The SFPUC will continue to comply with the Raker Act by making hydroelectricity generated by the Hetch Hetchy Project available at cost to MID and TID for agricultural pumping and municipal loads after the expiration of the power sales agreement, as electricity is available. See "CERTAIN RISK FACTORS – Raker Act Requirements." In recent years, neither MID nor TID have purchased hydroelectricity generated by the Hetch Hetchy Project. In the event the Districts renew their interest in such purchases, the SFPUC will prepare a rate, and provide electricity as it is available, consistent with Raker Act requirements.

The SFPUC previously entered into a long-term agreement with the Riverbank Local Redevelopment Authority (the "**Riverbank LRA**") to provide firm power to the Riverbank LRA to serve electric load at the former Riverbank Army Ammunition Plant (the "**RAAP**"). The agreement expired in 1991; however, the SFPUC continued to provide firm service under the same terms and conditions. The Riverbank LRA has since mostly converted the RAAP to civilian and commercial uses, and the site is now known as the Riverbank Industrial Complex (the "**RIC**"). In 2019, the Riverbank LRA and the SFPUC agreed to a short-term term sheet specifying new rates and terms of service. The SFPUC is currently providing service to the Riverbank LRA for the RIC under a revised term sheet specifying, among other things, rates and annual rate increases through June 2025. Total electric sales to the Riverbank LRA in Fiscal Years 2019-20 and 2020-21 were approximately 5,567 MWh and 6,065 MWh respectively. This was expected to more than double with the addition of a new tenant to the RIC in mid-2021. Total electric sales to the RIC for Fiscal Years 2021-22 and 2022-23 were approximately 19,011 MWh, and 21,265 MWh, respectively. See " – Power Enterprise Customers – *Wholesale Customers*."

Load and Electricity Supply Resource Management; Wholesale Electricity Trading

The Power Enterprise manages Hetch Hetchy Project generation with market power purchases as needed to meet retail load in real time and by season to account for the variability of available hydroelectric generation. As a net-long generator, variation in annual generation is covered by fund balances which are replenished in normal- and high-precipitation years. Seasonal variability in hydroelectric generation is addressed through seasonal market power sales and purchases. In the second half of the calendar year, the Power Enterprise has historically purchased wholesale electricity to meet, on average, approximately 15% of its needs. During dry years, when less Hetch Hetchy Project generation is available, the Power Enterprise's market exposure increases, historically by an additional 5% on average of its retail needs. See "THE HETCH HETCHY PROJECT – Variability of Hydroelectric Generation."

The following chart shows the last four years of historical Hetch Hetchy Project generation and Power Enterprise customer demand on an annual basis.



Source: SFPUC.

The SFPUC has adopted an Energy Trading Risk Management Policy applicable to the wholesale purchases and sales of electricity by the SFPUC to balance loads and resources in the near-term. The policy sets parameters for trades that include guidelines for load forecasting, counterparty eligibility, transaction authorizations, documentation and reporting requirements, and other transaction limitations. See “THE HETCH HETCHY PROJECT – Variability of Hydroelectric Generation.”

Transmission and Distribution

Since at least 1945, the SFPUC has purchased transmission and distribution services from PG&E through a FERC-approved wholesale agreement to transmit and deliver electricity to its City customers. The SFPUC currently purchases transmission service from PG&E under the CAISO tariff and distribution service under PG&E’s Tariff on file with the FERC. Although the SFPUC owns and operates transmission and distribution facilities within and outside of San Francisco, it lacks a comprehensive distribution system to serve its customers. The SFPUC uses the Tariff to serve almost all of its customers in San Francisco – largely City agencies and related public entities, City properties and tenants on those properties, and entities providing services on behalf of or in coordination with the City. In addition, the SFPUC uses the Tariff to serve other types of customers including the Salesforce Transit Center and the new development, The Shipyard. The SFPUC also serves or will serve other customers, including the developments at Pier 70 and Mission Rock, without using the Tariff.

See “DEVELOPMENTS IN THE ELECTRICITY MARKETS AND REGULATION – Federal Law and Regulation.”

Current transmission and distribution rates are pursuant to the FERC-approved tariffed rates for transmission service through the CAISO Open-Access Transmission Tariff and distribution service through PG&E’s Tariff. The Power Enterprise’s adopted two-year budget through Fiscal Year 2022-23, and all financial projections, include the anticipated cost increases. The cost estimate is $71.3 million for Fiscal Year 2023-24 and projected to increase on average 7.9% per year from Fiscal Year 2024-25 through Fiscal Year 2032-33.

SFPUC-owned Transmission Service

The SFPUC owns and maintains both 115 kV and 230 kV transmission lines extending from the generation units of the Hetch Hetchy Project. See “THE HETCH HETCHY PROJECT.” These transmission lines connect with the CAISO system and to two other balancing authorities: (i) the Balancing Authority of Northern California, which covers MID, and (ii) TID, which operates as its own balancing authority. See “DEVELOPMENTS IN THE ELECTRICITY MARKETS AND REGULATION – The Power Enterprise’s Relationship to the CAISO.”

The SFPUC also provides transmission-level service to RIC via a tap from the SFPUC’s 115 kV transmission system located just north of the main RIC site. The SFPUC service to SFO is also at transmission level via two SFPUC substations connected to PG&E-owned transmission lines. In addition, the Harry Tracy Plant and Crystal Springs Pump Station receive SFPUC transmission level service connected through switchgear to PG&E-owned transmission lines. All of these customers are located outside the geographic boundaries of San Francisco.

In-City Distribution

PG&E owns and operates most of the electric distribution infrastructure within San Francisco and, except for Trans Bay Cable, PG&E also owns all of the high-voltage transmission lines entering San Francisco. The Power Enterprise serves customers through City-owned distribution networks at large City-owned properties (for example, properties operated by the Port, SFMTA, and the SFPUC’s water treatment and wastewater facilities). The Power Enterprise has completed the installation of additional distribution facilities to serve new retail customers at The Shipyard, the early phases of the Treasure Island and Yerba Buena Island redevelopment project, and at the Salesforce Transit Center. The SFPUC distribution facilities (lines and switchgear) directly interconnect to PG&E’s distribution network, but they are not adequate to provide service to all SFPUC customers.

Through an agreement with TIDA, the Power Enterprise also maintains the existing electric distribution system at the former Naval Station Treasure Island, on behalf of TIDA. The existing system on the property was installed and owned by the United States Navy and transferred to TIDA pursuant to a memorandum of agreement between TIDA and the Navy. In an agreement with the Navy, the California Department of Transportation ("**Caltrans**") and TIDA, Caltrans installed two electric submarine cables from Oakland to Treasure Island. In an agreement with TIDA, the SFPUC paid Caltrans for the installation of the cables subject to reimbursement and has the right to take title to the submarine electric cables which provide electricity to Treasure Island from the East Bay. TIDA has entered into a development agreement for the redevelopment of the property, which includes construction of new utility infrastructure and will transfer to the SFPUC the new utility infrastructure after the facilities are inspected and accepted by the City through the street dedication process with the Board of Supervisors. Until the assets are transferred to the SFPUC through such dedication process, the SFPUC may serve permanent customers using the new infrastructure and facilities through a license agreement between the developer and the SFPUC. Under a license agreement, the developer will continue to own the substructures and the SFPUC will own and maintain the electrical facilities within the substructures. The SFPUC is currently serving new customer accounts utilizing the license method.

Operational Control

The Power Enterprise plans for and operates within resource adequacy, RPS, and other retail regulatory requirements for peak demand of 160 MW and an annual electricity requirement of 1,000,000 MWh of retail load. The Power Enterprise provides scheduling services on a non-stop basis. Electricity supplies are firmed and shaped to retail loads with market purchases and sales (at hourly, daily, monthly and longer term periods). Scheduling coordinator services and certain federal reliability requirements are independent of sales volumes, strategy and retail/wholesale mix. See "DEVELOPMENTS IN THE ELECTRICITY MARKETS AND REGULATION – Federal Law and Regulation." Power Enterprise staff handles trading, scheduling, settlements, risk management, and long-term resource planning with capacity largely independent of sales volumes, strategy, and retail/wholesale mix.

In Fiscal Year 2020-21, due primarily to the impacts of the COVID-19 pandemic, total metered load (including Treasure Island and Riverbank LRA) declined to approximately 842,874 MWh, with a peak demand of 118 MW. In Fiscal Year 2021-22, total metered load increased to approximately 925,800 MWh, with a peak demand of 137 MW. In Fiscal Year 2022-23, total metered load increased to approximately 945,946 MWh, with the peak demand remaining at 137 MW.

Power Enterprise Customers

The Power Enterprise's retail service territory provides it with a monopoly franchise similar to those enjoyed by other public utilities, but with atypical geographic boundaries. Except for a few large customers, most of the Power Enterprise's retail customers are directly interconnected to PG&E's distribution network. See "– Transmission and Distribution – *In-City Distribution*." Most Power Enterprise retail customers are entities affiliated with the City or are located on City property. Many City departments currently served by the Power Enterprise have been served by the City and/or the SFPUC (or its predecessor) for decades, in many cases since 1923. The ability of such customers to switch to service provided by another utility in the area is limited and generally would not result in cost savings or service improvements for such customers. Specifically, PG&E's ability to serve customers in San Francisco is constrained by its non-exclusive franchise agreement with the City and the Power Enterprise's competitive cost-of-service, which is currently below PG&E's cost-of-service.

The following table shows the total number of electric service accounts maintained by the Power Enterprise from Fiscal Years 2018-19 to 2022-23 by customer category.

TABLE 9
POWER ENTERPRISE ELECTRIC SERVICE ACCOUNTS
BY CUSTOMER CATEGORY
FISCAL YEARS 2018-19 TO 2022-23

	2018-19	2019-20	2020-21	2021-22	2022-23
Retail and Other[(1)(2)]	2,209	2,526	3,858	3,551	4,688
City Agencies	1,499	1,512	1,489	1,522	1,528
Moccasin/Riverbank LRA	37	37	36	35	38
Modesto/Turlock Irrigation Districts	2	2	2	2	2
Total Accounts	**3,747**	**4,077**	**5,385**	**5,110**	**6,256**

(1) Other customers include commercial and residential retail, and quasi-municipal customers such as Moscone tenants, Exploratorium, Yerba Buena Gardens and SFUSD.

(2) Decrease in accounts from Fiscal Year 2020-21 to 2021-22 due primarily to corrections to the customer type made during a transition to the Power Enterprise's new billing system. Increase in accounts from Fiscal Year 2021-22 to Fiscal Year 2022-23 due primarily to new accounts from affordable housing units.

Source: SFPUC

The following table presents the Power Enterprise's annual electricity sales for Fiscal Years 2018-19 to 2022-23 and shows major municipal and retail customers.

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TABLE 10
ANNUAL ELECTRICITY SALES
FISCAL YEARS 2018-19 TO 2022-23

	Annual Electricity Sales (MWh)				
	2018-19	**2019-20**	**2020-21**	**2021-22**	**2022-23**
Municipal Customers[(1)]					
San Francisco International Airport (incl. tenants)	311,460	300,299	267,514	278,622	279,902
Municipal Transportation Agency	105,990	93,852	68,289	92,728	95,854
SFPUC – Wastewater Enterprise	65,699	61,390	59,120	56,417	66,015
Administrative Services Agency	89,408	84,438	74,966	67,962	69,139
Department of Public Health	65,570	66,439	64,491	64,380	63,108
SFPUC – Water Enterprise	54,363	50,737	47,808	49,155	42,942
San Francisco Unified School District	30,608	27,933	21,723	30,955	30,421
Recreation and Parks Department	15,358	14,514	12,535	14,175	14,277
San Francisco Housing Authority	7,496	6,337	5,961	5,890	5,475
City Owned Parking Garages	10,210	7,797	6,479	6,926	7,359
Port of San Francisco[(2)]	11,898	10,073	7,288	14,199	15,180
Retail					
Treasure Island[(3)]	12,416	9,786	9,713	10,381	11,385
Hunters Point Shipyard Redevelopment – Phase 1 Development[(4)]	3,142	2,909	3,116	3,303	3,394
Salesforce Transit Center[(4)]	4,257	6,373	6,218	6,400	7,359
Other Municipal and Retail[(5)]	217,054	203,399	191,835	195,306	210,592
Wholesale					
Turlock Irrigation District	--	--	--	--	--
Modesto Irrigation District	--	--	--	--	--
Riverbank LRA	6,594	5,641	6,065	19,011	21,265
Western Systems Power Pool	14,124	91,872	--	--	--
Total[(6)]	**1,025,646**	**1,043,792**	**853,121**	**915,810**	**943,667**

(1) Includes some quasi-municipal customers, such as San Francisco Unified School District.
(2) Excludes tenants.
(3) Customers are tenants of TIDA and federal agencies. Excludes tenants paying a flat rate for combined utilities.
(4) Includes construction and post-construction/occupancy.
(5) Includes other City departments, Port tenants, Moccasin and miscellaneous residential and commercial accounts.
(6) Totals may not add due to rounding.
Source: SFPUC.

Significant load decreases across many customers began in April 2020 following the issuance of stay-at-home orders relating to the COVID-19 pandemic. Loads were significantly depressed in Fiscal Year 2020-21, although some loads showed signs of recovery. Impacts ranged from mild/none (e.g., Department of Public Health), to moderate (e.g., SFO), to severe (e.g., SFMTA, convention centers (convention center electricity sales included within Administrative Services Agency and Other Municipal and Retail)). Load recovery in Fiscal Years 2021-22 and 2022-23 has also been uneven, with certain customers showing a rapid rate of recovery, for example, the Port's shoreside power for cruise ships and SFUSD, and others such as SFO still significantly lower compared to the pre-COVID-19 pandemic period. The SFPUC anticipates that most power sales will return to pre-pandemic levels in Fiscal Year 2025-26. Some reductions may be permanent as the local economy shifts to a post-pandemic "new normal" with more remote work and shifts in the demand for City services. Pursuant to the 2024 Financial Plan, the SFPUC projects that sales to existing power customers will stabilize at approximately 98% of their pre-pandemic usage.

Municipal Customers

- San Francisco Public Utilities Commission: The Power Enterprise supplies electricity to the SFPUC Water Enterprise and Wastewater Enterprise. See "THE PUBLIC UTILITIES COMMISSION – Organization, Purposes and Powers."

- San Francisco International Airport: SFO is the principal commercial service airport for the San Francisco Bay Area. According to data for calendar year 2019 from the Airports Council International, SFO ranked seventh in the United States in terms of passengers and 16th in the United States in terms of air cargo tonnage. In 2021, SFO ranked 17th in the United States in terms of both passengers and air cargo tonnage, according to the Airports Council International. According to United States Department of Transportation statistics, SFO is also a major origin and destination point (14th in the United States in fiscal year 2021-22). Passenger enplanements and deplanements at SFO grew from approximately 39.7 million in fiscal year 2010-11 to approximately 57.4 million in fiscal year 2018-19, before dropping to 40.5 million in fiscal year 2019-20 and 13.7 million in fiscal year 2020-21 and recovering to 34.8 million in fiscal year 2021-22.

- San Francisco Municipal Transportation Agency: The SFMTA is an enterprise department of the City responsible for the management of all ground transportation in San Francisco. The SFMTA has oversight over Muni, as well as bicycling, paratransit, parking, traffic, walking, and taxis. Muni is one of America's oldest public transit agencies, the largest in the Bay Area, and eighth largest system in the United States. During the five-year period from fiscal year 2018 through fiscal year 2022, annual Muni ridership varied between approximately 62 million and 225 million boardings.

- San Francisco Unified School District: The San Francisco Unified School District is the sixth largest school district in California. SFUSD operates 66 elementary schools serving transitional kindergarten through grade five, six alternative configured schools serving transitional kindergarten through grade eight, 13 middle schools serving grades six through eight, 14 high schools serving grades nine through twelve, 13 early education schools, three continuation/alternative schools and six county schools. For fiscal year 2022-23, SFUSD had enrollment of approximately 50,013 students (not including county schools).

- Other City Departments: In addition to the departments described above, the Power Enterprise serves other City departments, including but not limited to City Hall, the Port, the San Francisco Public Library, the San Francisco Police Department, the San Francisco Fire Department, and also serves the San Francisco Housing Authority and the Community College District of San Francisco.

- City Tenants: The Power Enterprise serves customers who are tenants on City property, including at SFO and the Port.

Wholesale Customers

- The Districts: TID and MID, both established in 1887, are publicly owned irrigation districts in California that also provide retail electricity directly to homes, farms and businesses. The Districts were both organized under the Wright Act and operate under the provisions of the California Water Code as special districts. TID provides electric service within its 662 square mile service area to over 102,900 residential, commercial, industrial and other customers, and supplies water for irrigation use within its boundaries. MID provides electric service within its 160 square mile service area to over 131,600 residential, commercial, industrial and other customers, supplies water for irrigation use in a portion of Stanislaus County and owns and operates a water treatment plant which supplies treated domestic water on a wholesale basis to the City of Modesto. Although the Power Enterprise has long-term power sales agreements with the Districts that expired in 2017, the agreements have not been terminated. See "– Wholesale Electricity Sales."

- Riverbank Local Redevelopment Authority: The Riverbank LRA has converted the former RAAP to civilian and commercial uses. The former RAAP, now referred to as the RIC, is located at the southeastern edge of the City of Riverbank, five miles north of the City of Modesto and consists of approximately 673,000 square feet of buildings located on 173 acres. The SFPUC provides electric service to the Riverbank LRA for the RIC, and the

Riverbank LRA and the SFPUC are developing agreements to continue SFPUC service as RIC's electric load is expanding, exceeding 50 MW in the next few years. See "– Wholesale Electricity Sales."

- Western Systems Power Pool: The Western Systems Power Pool (the "**WSPP**") is a group of energy buyers and sellers who maintain an agreement that provides standard terms and conditions for power transactions to facilitate trading opportunities and manage power delivery and price risk. The current WSPP agreement, effective June 28, 2020, is the most commonly used standardized power sales contract in the electric industry. It is regularly modified and approved by FERC and used by jurisdictional and non-jurisdictional entities. WSPP parties regularly enter agreements using some or all of the WSPP standard terms and adding additional terms as required for particular transactions. Many public entities are members of the WSPP, which allows the Power Enterprise to efficiently sell excess Hetch Hetchy Project electricity to Raker Act-eligible entities, such as the Districts and the California CCAs.

The Power Enterprise may purchase or sell energy with different market entities through the WSPP and directly with the CAISO. During periods in which the Hetch Hetchy Project generates electricity in excess of the amount necessary to satisfy the Power Enterprise's retail and wholesale obligations, the Power Enterprise may sell such excess to counterparties eligible under the provisions of the Raker Act through the WSPP. The SFPUC performs verification processes regularly to update the qualified counterparties in order to comply with the Raker Act. Any excess or shortage thereafter is sold to or purchased from the CAISO. During Fiscal Years 2020-21 and 2021-22, the Power Enterprise purchased and sold nominal amounts of power through the WSPP. In contrast, power purchases through the CAISO were $5.3 million and $7.1 million in Fiscal Years 2020-21 and 2021-22, respectively, while sales of excess electricity through the CAISO were $13.4 million and $28.6 million, respectively.

Commercial Customers

- Hunters Point Shipyard Phase 1: A redevelopment project currently under construction, the Hunters Point Shipyard Phase 1 is entitled for 1,400 residential units. SFPUC has constructed facilities to serve this development, and will own, operate and maintain the distribution system as public utility infrastructure is installed and dedicated to the City.

- Treasure Island: Under Navy control since 1941, the former Naval Station Treasure Island was decommissioned in the 1990s. The property includes both Treasure Island and Yerba Buena Island, totaling approximately 575 acres with access from Highway 80 off the Bay Bridge. In 1997, the City created a non-profit public benefit corporation, TIDA, to act as a single entity focused on reuse and conversion of former Naval Station Treasure Island. Since that time, under agreements with the Navy, TIDA has assumed maintenance and operation of the property, excluding portions that were transferred to the United States Coast Guard, the United States Department of Labor, or retained by the Navy. TIDA has established both residential and commercial tenancies in existing facilities, with a current resident population over 2,500. TIDA has entered into a memorandum of agreement with the Navy providing for transfer of the property, on a phased basis, subject to Navy remediation of hazardous materials. The SFPUC operates and maintains the existing water, wastewater, gas, and power distribution systems on Treasure Island pursuant to agreement with TIDA, subject to receiving full compensation from TIDA for those services. TIDA sets rates, fees and charges for its tenants and the federal agencies under agreement with the Navy. TIDA and the City have also entered into agreements with the Treasure Island Community Developers, a for-profit development company, to redevelop the property, with entitlements for 8,000 residential units, and commercial development. As of 2023, approximately 1,080 new residential units have been constructed and are receiving power from the Power Enterprise. Unlike the legacy TIDA facilities which the SFPUC serves under agreement with TIDA, new redevelopment customers are served by SFPUC-owned assets and charged SFPUC standard retail rates.

- Salesforce Transit Center: The Transbay Joint Powers Authority ("**TJPA**") is constructing a new multi-modal regional transportation center, a downtown rail extension, bus ramps, bus storage facility, and related facilities (collectively referred to as the "**Salesforce Transit Center**"). Phase 1, which included the creation of a new, 1,000,000-square-foot transit center, was completed in 2018. TJPA is currently starting its design for Phase 2 of the Salesforce Transit Center program, which includes construction of the Downtown Rail Extension, including a new Fourth and Townsend Street Caltrain station; completion of the Salesforce Transit Center's train station, including a pedestrian connection to BART and Muni; and a new intercity bus facility. The TJPA and the SFPUC entered into an electric service agreement for the Power Enterprise to be the primary provider of electric service to the Salesforce Transit Center, beginning January 2014 with no defined expiration date. The SFPUC anticipates that future train service into the Salesforce Transit Center will be electrified, which may result in increased load. See "FUTURE POWER SUPPLY AND DEMAND" and "CERTAIN RISK FACTORS – Uncertainties of Forecasting Future Load Growth."

Under the City's Administrative Code, all City projects, including projects managed by the successor to the San Francisco Redevelopment Agency, the Office of Community Investment and Infrastructure, must work with SFPUC to study the feasibility of the Power Enterprise providing power to the project. For example, in 2007 the Power Enterprise, working with the San Francisco Redevelopment Agency, performed a financial analysis to assess the feasibility of the Power Enterprise being the electricity provider to the new Hunters Point Shipyard redevelopment project. The results of the analysis guided the City's decision that the Power Enterprise would be the power provider for Phase 1 of the development. The Power Enterprise expects to be the power provider for other phases of the Hunters Point Shipyard development and is working with developers and other City agencies as later phases are developed. Similar processes resulted in the Power Enterprise providing power to the Pier 70 Development and the Mission Rock Development.

Recent Factors Impacting Power Revenues

Because most Power Enterprise customers are municipal departments, the Power Enterprise's revenues vary in impact from recent economic trends which have reduced the residential and commercial population in San Francisco. For commercial and residential retail customers, as well as municipal functions which are exposed to such economic trends (such as the SFMTA and Moscone Convention Center), several factors have contributed to a decline in their electricity demand in recent years, including, but not limited to, certain developments in the local San Francisco economy. For example, there has been a general decline in San Francisco's population in recent years due to, among other factors, business closures, worker migration out of San Francisco because of permissive remote work policies, a general decline in tourism, and unemployment concentrated recently in the tech-heavy information and professional and business services sectors, which can be attributable in some part to the COVID-19 pandemic. However, other customers, including the San Francisco Unified School District and the Port, have recovered to or exceeded their pre-COVID-19 usage levels as of 2022. See also "THE CITY AND COUNTY OF SAN FRANCISCO – *City Financial Challenges*," "– Power Enterprise Customers," "FUTURE POWER SUPPLY AND DEMAND – Projected Power Demand and Adequacy of Power Supply" and "CERTAIN RISK FACTORS – Customer Concentration."

Security and Reliability

The security and reliability of the nation's electrical grid is regulated by FERC through agreement with the NERC. The SFPUC is a NERC-registered Generator Owner, Generator Operator, Transmission Owner, Transmission Operator, and Transmission Planner, and as such is subject to NERC's mandatory and enforceable reliability standards (the "**NERC Reliability Standards**"). The SFPUC ensures the secure and reliable operation of its electric system, and compliance with the NERC Reliability Standards, by having systems, processes, and trained staff in place to avoid, and if necessary, mitigate operating emergencies. These systems include a SCADA system providing 24/7 monitoring and control functions to NERC-certified system operators, and data sharing functions with interconnected transmission systems to enhance situational awareness and interconnection-wide preparedness. The secure and reliable operation of the Hetch Hetchy Project system is maintained by following a well-defined set of mandatory rules established by the NERC Reliability Standards, which the SFPUC implements through its own operating procedures, in coordination with other interconnected systems. The SFPUC's procedures provide its trained personnel with pre-planned processes for event reporting, back-up control center operations, system restoral, emergency operations, and contingency analysis and planning that can be executed in coordination with other entities. The security and reliability of the Hetch Hetchy Project, and compliance with the NERC Reliability Standards, is achieved through this application of tools, processes, and trained staff.

FUTURE POWER SUPPLY AND DEMAND

Projected Power Demand and Adequacy of Power Supply

The Power Enterprise develops five-year forecasts of growth in electricity sales to its customers based on a combination of known new construction projects, expansion of existing service and general projected load growth. Included in these forecasts are the Power Enterprise's adopted budget for Fiscal Years 2023-24, the 2024 Financial Plan and current budget and planning assumptions for the remaining forecast period. The Power Enterprise anticipates electricity sales to current and new customers will increase over the next five years.

TABLE 11
POWER ENTERPRISE
PROJECTED LOAD GROWTH AND POWER SUPPLIES (MWH)
FISCAL YEARS 2023-24 TO 2027-28

	2023-24	2024-25	2025-26	2026-27	2027-28
Projected Power Load Sales(1)					
Current Customers	923,203	947,100	968,469	985,646	999,894
Redevelopment – New Customers(2)	18,963	53,402	80,067	121,641	139,531
Other – New Customers(3)	8,346	22,688	41,075	43,012	43,154
Total Projected Retail Power Sales	**950,512**	**1,023,190**	**1,089,611**	**1,150,300**	**1,182,579**
Riverbank LRA	22,261	22,200	22,200	22,200	22,200
Contract/Market Sales(4)	454,201	434,863	412,737	364,162	352,917
Total Projected Wholesale Power Sales	**476,462**	**457,063**	**434,937**	**386,362**	**375,117**
Projected Power Supply					
Hetch Hetchy Generation	1,224,103	1,234,616	1,234,616	1,245,987	1,269,995
Sunset Solar Generating Project	6,607	6,603	6,600	6,597	6,593
Energy Purchases(5)	280,194	300,425	348,709	353,096	352,063
Total Projected Power Supply	**1,510,904**	**1,541,644**	**1,589,925**	**1,605,680**	**1,628,651**

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(1) Fiscal Year 2023-24 projections based on adopted budget for Fiscal Year 2023-24. Fiscal Years 2024-25 through 2027-28 projections based on budget and planning assumptions in 2024 Financial Plan.

(2) "Redevelopment – New customers" includes Hunter's Point, Salesforce Transit Center, Alice Griffith, Pier 70 Historic Core, Pier 70 Forest City, Mission Rock, Potrero-Hope SF, Sunnydale-Hope SF, UCSF Block 34, and new Treasure/Yerba Buena Island load.

(3) "Other – New Customers" includes City departments and other retail or housing customers that are outside of the redevelopment areas.

(4) "Contract/Market Sales" are all sales of excess Hetch Hetchy Project generation after meeting retail load requirements. The availability of Hetch Hetchy Project generation depends on hydrological conditions. Contract/Market Sales forecasts are based on Average Annual Hydrological Conditions. See "THE HETCH HETCHY PROJECT – Variability of Hydroelectric Generation."

(5) "Energy Purchases" are needed to shape the supply to the demand, resulting in Total Projected Power Supply exceeding Total Projected Retail Power Sales.

Source: SFPUC.

The Power Enterprise meets its electricity delivery obligations through a portfolio of demand management and supply-side resources consistent with City policies and best utility practices. The Power Enterprise anticipates addressing any increases in retail electricity sales through a combination of energy efficiency measures, Hetch Hetchy Project generation as available, and supplemental market purchases, each as reflected in the Power Enterprise's current five-year forecast. See "CERTAIN RISK FACTORS – Uncertainties of Forecasting Future Load Growth."

POWER ENTERPRISE CAPITAL PROGRAM

Capital and Financial Planning Process

The SFPUC's long-term capital and financial planning is performed on an annual rolling 10-year forward-looking basis. The SFPUC prepares a 10-year capital plan for each of its enterprises, as required by the Charter. The 10-year capital plan serves as the basis for the development of the annual 10-year financial plan. Proposed long-term capital programs, projects and investments, and related costs are included in the 10-year financial plan. Consistent with the Charter, updates to the 10-year capital plan and 10-year financial plan are generally reviewed at least annually and adopted by the Commission each February. The 10-year financial plan provides estimated rate impacts of projected capital and operating spending and assures compliance with the SFPUC's adopted financial policies, including its debt service coverage and fund balance reserve policy requirements.

The 10-year capital plan is not a budget and is not "appropriated" like a budget. The annual capital programs can be revised during the development of the budget and final projects, costs and totals for specific capital improvements to be financed can change. Consequently, even though the annual budgets passed are based on the 10-year capital plan, they may occasionally differ from it.

Financing of Capital Program

On February 14, 2023, the Commission adopted the 10-year capital plan for Fiscal Years 2023-24 through 2032-33 (the "**2024 Capital Plan**"), totaling approximately $8.788 billion. Pursuant to the 10-year financial plan for Fiscal Years 2023-24 through 2032-33 (the "**2024 Financial Plan**"), which is based on the 2024 Capital Plan and which was also adopted on February 14, 2023, approximately $1.572 billion has been allocated to Hetch Hetchy Water and Power, with approximately $441.21 million allocated to Hetch Hetchy Water and $1.13 billion allocated to the Power Enterprise over the 10-year period.

The 2024 Capital Plan further projects that revenue funding over such period will account for $196.74 million of project funding and total debt funding will account for $1.38 billion of project funding. Of such debt funding amount, $934.48 million is projected to be allocated to Power Enterprise debt and $441.21 million is projected to be allocated to Water Enterprise debt. See "FORWARD-LOOKING STATEMENTS."

The following table sets forth the projected sources of funds for the first five years of the Power Enterprise's capital improvement program as set forth in the 2024 Capital Plan. The following table does not include the projected sources of funds allocable to the Water Enterprise.

TABLE 12
POWER ENTERPRISE CAPITAL IMPROVEMENT PROGRAM
FUNDING SOURCES[(1)]
FOR FISCAL YEARS ENDING JUNE 30
(IN THOUSANDS)

Appropriations	2024	2025	2026	2027	2028	Total
Power Enterprise Debt[(2)]	$34,877	$137,270	$158,624	$155,084	$116,458	$602,312
Power Enterprise Revenue[(3)]	7,015	7,811	13,029	20,665	20,665	69,185
Total Sources	$41,892	$145,081	$171,653	$175,749	$137,123	$671,497

(1) Amounts are based on anticipated appropriations and are projections from the Power Enterprise 2024 Capital Plan. Actual results may differ materially from these projections. See "FORWARD-LOOKING STATEMENTS."
(2) Consists of Power Enterprise revenue bonds and Commercial Paper Notes.
(3) Includes non-operating revenues, such as revenues from the licensing of street poles for installation of distributed antenna system equipment, cap-and-trade auctions, and the sale of Low Carbon Fuel Standard ("**LCFS**") credits allocable to the Power Enterprise.

Source: SFPUC.

2024 Capital Plan Projects

The 2024 Capital Plan consists of projects that are Power Enterprise Projects, Hetch Hetchy Water Infrastructure Projects, Hetch Hetchy Power Infrastructure Projects, and Hetch Hetchy Joint Water and Power Infrastructure Projects, which are further described below. The following descriptions include projected capital spending for these project categories pursuant to the 2024 Capital Plan; however, actual spending may differ from the amounts shown as the SFPUC retains broad authority to prioritize and substitute projects to meet its needs at any time.

Power Enterprise Projects

Streetlights. The 2024 Capital Plan includes approximately $37.2 million for streetlights located in San Francisco. Specifically, funds will be spent for various street lighting improvements, replacement and repairs, including engineering and construction costs.

Renewable Generation. The 2024 Capital Plan includes approximately $10.0 million for renewable generation projects, including the planning, development and implementation of new electricity generation resources to provide clean, local generation.

Transmission/Distribution/Alternative Transmission. The 2024 Capital Plan includes approximately $538.4 million for transmission/distribution projects, including (i) approximately $141.6 million on distribution interface-redevelopment projects, (ii) approximately $146.6 million on the SFO substation improvements, which include upgrading existing substations to meet the airport's demand growth, and (iii) approximately $105.5 million on the Intervening Facilities project, which includes electrical distribution equipment to connect SFPUC customers to PG&E's existing distribution system; (iv) $42.7 million for the in-city power asset acquisition analysis.

Energy Efficiency. The 2024 Capital Plan includes approximately $10.0 million for energy efficiency projects, that will be spent on investments to reduce facility operating costs for General Fund and other Power Enterprise customers, improve system functionality and reduce the environmental impact of energy use.

Hetch Hetchy Water Infrastructure Projects

During the 10-year period of the 2024 Capital Plan, the Water Enterprise will invest $185.6 million for improvements on the Hetch Hetchy Project. Funds will be spent on upcountry water projects such as Mountain Tunnel, which has been reclassified as a Water Enterprise-funded project, except for the Flow Control Facility, which is joint-funded (See "– *Hetch Hetchy Joint Power/Water Projects*" below), San Joaquin Pipeline Valve and Safe Entry project, and continued rehabilitation to the San Joaquin Pipeline to extend the life of the asset. These costs are expected to be 100% funded by the Water Enterprise.

Hetch Hetchy Power Infrastructure Projects

The 2024 Capital Plan includes approximately $223.3 million for rehabilitation and upgrades to Hetch Hetchy Project powerhouses, including Moccasin Powerhouse rehabilitation project and upgrades to the bypass systems at Kirkwood and Moccasin powerhouses. This category includes rehabilitation of transmission lines/distribution systems and switchyards/substations.

Hetch Hetchy Joint Power/Water Projects

During the 10-year period of the 2024 Capital Plan, approximately $568.1 million will be related to capital spending for upcountry joint assets, allocable 55% to the Power Enterprise and 45% to the Water Enterprise pursuant to the Water Supply Agreement. See "THE HETCH HETCHY PROJECT – Hetch Hetchy Project Operations – *General*." The Power Enterprise's 55% allocable share of this capital spending totals $312.4 million. Projects identified include replacements to support the infrastructure required for the operation and maintenance for the Hetch Hetchy Project's water- and power-related systems, including improvements to dam infrastructure, buildings and facilities improvements and new construction, road improvements, facility security and communication projects. The largest of the joint power/water projects during the 2024 Capital Plan period is spending on dam rehabilitation and improvement projects, totaling $274.9 million.

Environmental Considerations

Projects undertaken by the SFPUC are generally subject to CEQA and certain projects involving the participation of federal agencies, including projects on federal land, are also subject to the NEPA. The San Francisco Planning Department, acting as lead agency under Chapter 31 of the City's Administrative Code, generally coordinates environmental review of SFPUC projects.

Under CEQA, a project that may have a significant effect on the environment and is to be carried out or approved by a public agency must comply with a comprehensive environmental review process, including the preparation of an Environmental Impact Report ("**EIR**"). The EIR reflects not only an independent technical analysis of the project's potential impacts, but also the comments of other agencies with some form of jurisdiction over the project and the comments of interested members of the public. Contents of the EIR include a detailed statement of the project's significant environmental effects; any such effects that cannot be avoided if the project is implemented; mitigation measures proposed to minimize such effects; alternatives to the proposed project; the relationship between local and short-term uses and long-term productivity; any significant irreversible environmental changes that would result from the project; the project's growth-inducing impacts; and a brief statement setting forth the agency's reasons for determining that certain effects are not significant and hence do not require discussion in the EIR. Before approving a project, the SFPUC must make findings on whether or how it can mitigate the significant environmental effects of the project. If the project requires mitigation, the SFPUC must adopt a mitigation monitoring plan to determine whether the mitigation is carried out during project implementation. If the SFPUC determines that the project itself will not have a significant effect on the environment, it may adopt a written statement (called a negative declaration) to that effect and need not prepare an EIR. After deciding to approve or carry out a project, either following the EIR process or after adopting a negative declaration, the SFPUC must file notice of such determination.

Prior to the sale of bonds, the San Francisco Planning Department Environmental Review Officer will issue a "Planning Certificate" required under Proposition E. The Planning Certificate will identify the status of environmental review for each capital project to be funded under the proposed bond sale and the type of CEQA document either completed or to be completed for each project. CEQA compliance must be completed for each project prior to project approval or approval to award a construction contract to implement any project to be funded by the proposed bond sale.

Any action or proceeding challenging the SFPUC's determination must be brought within 30 days following the filing of such notice. Actions have been, and in the future may be, filed against the SFPUC challenging a project's compliance with CEQA, including the adequacy of the EIR and other environmental documents, for particular projects. If an action challenging the SFPUC's compliance with CEQA is successful, the particular project could be delayed, revised, suspended or canceled. CEQA also contains a number of exemptions, which the SFPUC uses for its projects when appropriate.

As part of its regular planning and budgetary process, the San Francisco Planning Department gives careful attention to environmental considerations. All projects are evaluated under the SFPUC's environmental evaluation procedures, developed in compliance with federal and State laws and regulations, and City ordinances and Administrative Code procedures.

Climate Action Plan

In September 2021, the City adopted a set of emissions reduction targets: achieve net-zero greenhouse gas emissions generated by the City by 2040 and reduce emissions associated with consumption of all goods and services in the City (regardless of where emissions originate) 80% by 2050. In December 2021, Mayor Breed released the City's Climate Action Plan (the "**Climate Action Plan**") detailing the actions needed to accomplish these targets, developed through a multi-agency and stakeholder process led by the San Francisco Department of Environment (the "**Department of Environment**"). The Climate Action Plan is a roadmap of goals, strategies and actions to achieve emission reductions across six sectors: energy supply, building operations, transportation and land use, housing, responsible production and consumption, and healthy ecosystems. Key strategies include, but are not limited to, provision of 100% carbon-free energy, decarbonization of buildings, and increases in the public transit, active transportation, and vehicle electrification networks. In addition to reducing emissions to zero over the next 20 years, the Climate Action Plan strives to ensure all San Franciscans have the skills, knowledge, and resources to meet interconnected challenges that lie ahead, including climate change. To do so, the proposed strategies aim to leverage community strengths, advance racial and social equity, and provide critical benefits to the entire community. The Climate Action Plan includes sections on funding and investment, monitoring and reporting. The City also maintains a public-facing reporting mechanism to keep stakeholders and residents informed on progress made against performance metrics laid out in the Climate Action Plan. The Department of Environment contracted with the University of California, Berkeley, Center for Law, Energy & the Environment (the "**CLEE**") to assess options for funding the equitable implementation of the Climate Action Plan. CLEE released its report entitled "Funding San Francisco Climate Action" in November 2022.

Pursuant to the Climate Action Plan, energy supply sector goals include achieving 100% affordable and reliable renewable electricity by 2025 and 100% renewable energy by 2040, which requires eliminating fossil fuels as a source of power generation. Strategies for achieving such goals include (i) supplying 100% greenhouse gas-free electricity to residents and businesses; (ii) investing in local renewable energy and energy resilience projects; (iii) designing and developing the reliable and flexible grid of the future; (iv) developing workforce capacity to deliver clean energy resources; and (v) planning for the equitable decommissioning of San Francisco's natural gas system with plans for coordinated electrification. Actions taken by the Power Enterprise to implement such strategies include the continuation and expansion of programs and rates that provide low-income customers with renewable electricity; ensuring community and stakeholder engagement in program development and rate-setting; developing onsite solar on City-owned buildings and reservoirs based on emerging opportunities and SFPUC feasibility analysis; encouraging private sector investment in local renewable energy solutions by engaging in public advocacy, educating consumers about their options, and serving as a strategic partner; and championing clean energy installers participating in City-funded incentive programs that engage in workforce development.

FINANCIAL OPERATIONS

General

The SFPUC is a department of the City and, as such, the financial operations of the SFPUC's three enterprises are included in the Annual Comprehensive Financial Report of the City and shown as enterprise funds. *The City's Annual Comprehensive Financial Report is not incorporated by reference herein*.

The following information is provided with respect to the Power Enterprise only and does not purport to reflect the financial position of the SFPUC or the City as a whole.

Basis of Accounting. The accounts of Hetch Hetchy Water and Power are organized based on proprietary fund types and are included as enterprise funds of the City. The activities of the Power Enterprise are accounted for with a separate set of self-balancing accounts that comprise assets, deferred outflows, liabilities, deferred inflows, net position, revenues and expenses. The Power Enterprise fund accounts for activities (i) that are financed with debt that is secured solely by a pledge of the net revenues from fees and charges of the activity; or (ii) that are required by laws or regulations that the activity's costs of providing services, including capital costs (such as depreciation or debt service), be recovered with fees and charges, rather than with taxes or similar revenues; or (iii) that the pricing policies of the activity establish fees and charges designed to recover its costs, including capital costs (such as depreciation or debt service).

The financial activities of the Power Enterprise are accounted for on a flow of economic resources measurement focus, using the accrual basis of accounting in accordance with generally accepted accounting principles in the United States. Under this method, all assets and liabilities associated with operations are included on the statements of net position, revenues are recognized when earned, and expenses are recognized when liabilities are incurred. Operating revenues are defined as charges to customers and rental income.

The Power Enterprise applies all GASB pronouncements, as well as statements and interpretations of the Financial Accounting Standards Board, Accounting Principles Board Opinions, and Accounting Research Bulletins of the Committee on Accounting Procedures issued on or before November 30, 1989, unless those pronouncements conflict with or contradict GASB pronouncements.

City Budget Process. The SFPUC's operating and capital budget preparation and approval is a part of a City-wide process. The SFPUC is one of several departments that prepare biannual budgets. The Commission reviews and approves the SFPUC's two-year budget, which is then submitted to the Mayor's Office for review. The Mayor then incorporates the proposed budget, with amendments, into the City-wide budget that is submitted to the Board of Supervisors for approval. Under the Charter, the Board of Supervisors may increase or decrease any proposed expenditure in the Mayor's budget so long as the aggregate changes do not cause the expenditures to exceed the total amount of expenditures proposed by the Mayor. The Charter further provides that the Mayor may reduce or reject any expenditure authorized by the Board of Supervisors except appropriations for bond interest, redemption or other fixed charges, subject to reinstatement of any such expenditure by a two thirds vote of the Board of Supervisors.

City Services Auditor. On November 4, 2003, voters of San Francisco adopted Proposition C, an ordinance that established the City Services Auditor ("**CSA**"), an audit function within the Office of the City Controller. Pursuant to the provisions of this ordinance, which have been incorporated into the Charter, the CSA has broad oversight authority and responsibilities including, but not limited to, (i) reporting upon level of effectiveness for City public services, (ii) auditing financial and management performance of City departments and functions, (iii) ensuring the financial integrity and improving the overall performance and efficiency of City government, and (iv) maintaining a whistleblower hotline to investigate upon reports of fraud, waste and abuse.

CSA has engaged HKA Global, Inc. and Yano Accountancy Corporation to conduct a three-phase performance audit of select revenue bonds issued by the SFPUC to determine whether revenue bond funds were spent in accordance with the stated purposes and permissible use of such bonds. The first phase included the audit of six series of revenue bonds issued by the SFPUC's Water and Wastewater Enterprises. In February 2022, CSA issued the audit report for the first phase, which concluded that the revenue bond expenditures for such bonds were spent appropriately, and made two recommendations that (i) the SFPUC coordinate with RBOC to determine the most effective method to comprehensively report project expenditures by funding source and uses of revenue bond proceeds, and (ii) the SFPUC comply with its policies regarding quality assurance audits. The SFPUC has since implemented both recommendations from the first phase audit report. The second phase included the audit of six series of revenue bonds issued by the SFPUC's Water, Wastewater and Power Enterprises. In August 2023, CSA issued the audit report for the second phase, which concluded that nearly all revenue bond expenditures were spent appropriately. The audit identified two contracts with expenditures totaling $15.36 million (representing less than 1.5% of the audited expenditures) in which CSA determined that the SFPUC did not comply with preferred procurement practices. CSA made two recommendations: (i) that the SFPUC improve documentation controls over its procurement solicitation requirements, with which the SFPUC partially concurred, and (ii) that the SFPUC coordinate with RBOC to strengthen its monitoring activities on overhead rates on capital projects funded with revenue bond proceeds, with which the SFPUC did not concur. The third phase is currently ongoing and includes the audit of six series of revenue bonds issued by the SFPUC's Water, Wastewater and Power Enterprises. The SFPUC anticipates that the audit report for the third phase will be issued by July 2024.

Financial Management Policies. To support sound financial management practices during periods of instability and to ensure organizational accountability and disciplined decision making, and to maintain the highest practical credit ratings, the SFPUC conducted an extensive peer review study to compare the financial policies of other United States municipal utilities, analyze rating agency evaluations of financial policies and recommend changes to the SFPUC's existing financial policies. Based on this study, the Commission adopted in February and March 2017 a Debt Service Coverage Policy, a Capital Financing Policy and a Fund Balance Reserve Policy. The SFPUC subsequently revised its Debt Management Policies and Procedures, which the Commission adopted in November 2019. See "– Financial Management Policies." In addition, the Commission adopted a Ratepayer Assurance Policy to address the prudent use of ratepayer funds and the establishment of rates and charges and to ensure process transparency.

Rate-Setting Process; Rates

General

The California Constitution permits the City, like other municipalities within California, to serve electric customers both within and outside of its geographic borders, except within the service territory of another municipality that objects to such service. Section 8B.121 of the Charter gives the SFPUC exclusive control of energy supplies and utilities for the City. The Commission sets the rates, fees and other charges imposed in connection with the provision of utility services within its geographic borders pursuant to Section 8B.125 of the Charter. Commission action on all retail rates, fees and charges for utility services is subject to rejection – within 30 days of submission – by resolution of the Board of Supervisors. If the Board of Supervisors fails to act within 30 days, the rates shall become effective without further action by the Board of Supervisors. Prior to the Commission taking action on any rate-setting, the proposed rates, fees and charges are reviewed by the Citizens' Advisory Committee and the Rate Fairness Board (as further described under "– *SFPUC Citizens Advisory Committee and Rate Fairness Board*").

In addition, under Charter Section 8B.125, in setting retail rates, fees and charges, the Commission must:

(a) Provide sufficient revenues to improve or maintain the financial condition and bond ratings of the Power Enterprise at or above levels equivalent to highly-rated utilities, meet requirements and covenants under all bond resolutions and the Indenture, and provide sufficient resources for the continued financial health (including appropriate reserves), operation, maintenance and repair of the Power Enterprise, consistent with good utility practice;

(b) Retain an independent rate consultant to conduct a cost-of-service study for the Power Enterprise at least every five years;

(c) Set retail rates, fees and charges based on the cost-of-service;

(d) Study and develop, in accordance with applicable state and federal laws, rate-based conservation incentives or lifeline rates and similar rate structures to provide assistance to low-income customers;

(e) Adopt annually a rolling five-year forecast of rates, fees and other charges; and

(f) Establish an independent Rate Fairness Board.

None of the rates set by the Commission are subject to administrative or regulatory review by any State or federal regulatory body, including the CPUC and FERC. However, such rates are subject to review by the Board of Supervisors and must comply with certain ratemaking and other requirements of federal and State law, together with the Charter and municipal code of the City. It is possible that future legislative or regulatory changes could subject the rates or service area of the SFPUC to the jurisdiction of a regulatory body such as the CPUC, or to other limitations or requirements of law.

SFPUC Citizens Advisory Committee and Rate Fairness Board

The Citizens' Advisory Committee ("**CAC**"), established by a Charter amendment in 2002, provides recommendations to the SFPUC's General Manager and the Board of Supervisors regarding the SFPUC's long-term strategic, financial and capital improvement plans for all of its enterprises. The CAC is comprised of 17 appointees. Each member of the Board of Supervisors may appoint one member who must be a resident of their supervisory district. Candidates must demonstrate one or more of the following qualifications: represent a community, business, environmental or environmental justice organization, or have demonstrated knowledge, skill or experience in a field related to public utilities, environmental justice or environmental science. Two additional members of the CAC are appointed by the President of the Board of Supervisors, one of whom represents a small business and the other of whom represents an environmental justice organization. The final four members are appointed by the Mayor and must include one member who represents regional water customers of the SFPUC, one who represents a large

San Francisco water user, one San Francisco resident who has knowledge of engineering or financial management and one who represents a regional or statewide environmental organization.

Proposition E directed the establishment of a Rate Fairness Board to advise the SFPUC on water, sewer, and power rate matters. The Rate Fairness Board consists of seven members: the City Administrator or their designee; the Controller or their designee; the Director of the Mayor's Office of Public Finance or their designee; two residential San Francisco retail customers, consisting of one appointed by the Mayor and one by the Board of Supervisors; and two San Francisco retail business customers, consisting of a large business customer appointed by the Mayor and a small business customer appointed by the Board of Supervisors. Specific powers for the Rate Fairness Board include the authority to: (1) review the five-year rate forecasts produced by the SFPUC enterprises, including the Power Enterprise; (2) hold one or more public hearings on annual rate recommendations before the SFPUC adopts rates; (3) provide a report and recommendations to the SFPUC on any rate proposal; and (4) in connection with periodic rate studies, submit to the SFPUC rate policy recommendations for the Commission's consideration, including recommendations to reallocate costs among various retail utility customer classifications, subject to any outstanding bond requirements. The Rate Fairness Board is not authorized, however, to reject proposed rates approved by the Commission.

Cost of Service Studies

Proposition E also added a requirement in the Charter that the SFPUC conduct an independent utility cost-of-service study at least every five years. The most recent study was completed in May 2022 (the "**2022 Power Rates Study**") to evaluate the cost of service of the Power Enterprise and to recommend appropriate rate structures. For more information regarding the 2022 Power Rates Study, see "– Rate-Setting Actions" below.

Rate-Setting Actions

From July 2012 through June 2022, the Power Enterprise provided service to three "rate classes:" (i) General Use Municipal, (ii) Enterprise Municipal (including, but not limited to SFO, the SFPUC's Water and Wastewater Enterprises, and the Port of San Francisco), and (iii) Retail (Non-Municipal). For the General Use Municipal rate class, there was one flat $ per kWh charge that did not vary based on the season or customer class, or have demand or fixed service charges. General Use Municipal rates were lower than the Enterprise Municipal rates and the cost of service identified in the 2022 Power Rates Study. For the Enterprise Municipal rate class, electric rates and charges were established to cover Power Enterprise expenses for operations, maintenance, and capital investment. For certain private entities and some municipal and public agencies, electric rates were based on rate schedules adopted by PG&E, as authorized in a rate-setting process regulated by the CPUC. Finally, for the Retail rate class, due to limited cost data for these new customers, as well as a policy goal to remain competitive with PG&E, the Power Enterprise's retail power rates were set to 10% below the equivalent PG&E tariff schedules, with automatic annual adjustments.

The 2022 Power Rates Study transitioned away from the legacy groupings described above, and instead charge all customer rates based on their customer class (i.e., residential, small commercial, medium commercial, large commercial, industrial, etc.), and to move all rates to their cost of service. The transition was designed to support the fiscal health of the Power Enterprise, improve the fairness of the Power Enterprise's rates, vastly simplify billing administration, and set up the program to implement modern rate structures to support its policy goals.

Key rate design changes proposed as part of the 2022 Power Rates Study included the following:

- Assigning all General Use customers to the appropriate customer class.
    - Creating a "Municipal General" rate for each class with the same structure as the retail rate within that class (i.e., the same seasonal periods, energy and demand line items, customer charge, etc.).

    - Calculating the Municipal General rate as a discount from the equivalent retail rate schedule in the year, solving for an all-in average $ per kWh effective rate that increases by $0.03/kWh annually from the prior General Use rate of $0.0988/kWh.

    - If the Municipal General rate for a fiscal year met or exceeded the cost of service for the customer class, eliminating the rate schedule, and charging these customers the normal retail rate for that customer class.

- For Enterprise and Retail customers, maintaining the current rate structures and options available, but transitioning to cost of service, with some adjustments.

    - Phasing-in rate changes – increasing or decreasing – to the cost-of-service rate over two fiscal years.

    - If phasing-in would require an increase of more than 10% annually in the all-in average $ per kWh paid by customers on a particular rate schedule, limiting the increase to no more than approximately 10% as a customer class.

- Distributing the under-collection amount to all retail and Enterprise non-residential rate classes.

In addition to the steps described above, the proposed rates were generally designed to minimize significant changes to rate structures, because the proposed changes to rate levels as part of the transition to cost of service rates are significant.

On May 24, 2022, the Commission adopted Resolution 22-0095, establishing rates for Fiscal Years 2022-23 and 2023-24 based on staff recommendations from the 2022 Power Rates Study.

The following tables set forth adopted electric service rates for Fiscal Year 2023-24 for major customer classes. For Fiscal Year 2023-24, the "Residential" customer class is projected to make up approximately 3.7% of revenues; the "small commercial" customer class is projected to make up approximately 8.4% of revenues; the "medium commercial" customer class is projected to make up approximately 14.3% of revenues; the "large commercial" customer class is projected to make up approximately 10.6% of revenues; and the "industrial" customer class is projected to make up approximately 63% of revenues.

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TABLE 13
ADOPTED RETAIL, ENTERPRISE MUNICIPAL AND GENERAL USE ELECTRIC SERVICE RATES FOR MAJOR CUSTOMER CLASSES FOR FISCAL YEAR 2023-24

Residential, Gas Heating	**Retail and Enterprise Municipal(1)**	**General Use(2)**
Customer Charge ($ per month)	$7.23	--
Summer Energy Charge ($ per kWh)		
Tier 1 (0 kWh – 227 kWh)	$0.22770	--
Tier 2 (227 kWh – 524 kWh)	$0.27324	--
Tier 3 (Over 524 kWh)	$0.40986	--
Winter Energy Charge ($ per kWh)		
Tier 1 (0 kWh – 252 kWh)	$0.22770	--
Tier 2 (252 kWh – 579 kWh)	$0.27324	--
Tier 3 (Over 579 kWh)	$0.40986	--

Small Commercial (Demand <75 kW)	**Retail and Enterprise Municipal(1)**	**General Use(2)**
Customer Charge ($ per month)		
Single Phase Service	$14.31	$8.52
Poly Phase Service	$35.80	$21.32
Summer Energy Charge ($ per kWh)	$0.29680	$0.17332
Winter Energy Charge ($ per kWh)	$0.23852	$0.13862

Medium Commercial (Demand 75-500 kW)	**Retail and Enterprise Municipal(1)**		**General Use(2)**	
	Secondary(3)	**Primary(4)**	**Secondary(3)**	**Primary(4)**
Customer Charge ($ per month)	$255.11	$238.51	$181.77	$192.84
Summer Energy Charge ($ per kWh)	$0.18865	$0.17023	$0.12729	$0.12955
Winter Energy Charge ($ per kWh)	$0.15362	$0.13881	$0.10233	$0.10414
Demand Charge ($ per kW)	$20.70	$17.12	$14.75	$13.84

Large Commercial (Demand 500-1000 kW)	**Retail and Enterprise Municipal(1)**		**General Use(2)**	
	Secondary(3)	**Primary(4)**	**Secondary(3)**	**Primary(4)**
Customer Charge ($ per month)	$1,659.31	$1,553.60	$1,350.68	$1,529.83
Summer Energy Charge ($ per kWh)				
On-Peak	$0.12123	$0.09424	$0.08598	$0.07744
Part-Peak	$0.12123	$0.09424	$0.08598	$0.07744
Off-Peak	$0.09969	$0.07821	$0.06845	$0.06165
Winter Energy Charge ($ per kWh)				
Part-Peak	$0.10727	$0.08385	$0.06114	$0.06721
Off-Peak	$0.09962	$0.07815	$0.05604	$0.06159
Summer Demand Charge ($ per kW)				
On-Peak	$15.44	$12.89	$12.57	$12.69
Part-Peak	$12.59	$10.78	$10.25	$10.62
Off-Peak	$28.24	$22.93	$22.98	$22.58
Winter Demand Charge ($ per kW)				
Maximum	$28.24	$22.93	$22.98	$22.58

(Table and footnotes continued on the following page.)

Industrial (Demand >1000 kW)	Retail and Enterprise Municipal[1]		General Use[2]	
	Secondary[3]	**Primary[4]**	**Secondary[3]**	**Primary[4]**
Customer Charge ($ per month)	$1,660.42	$1,594.48	$1,522.94	$1,518.50
Summer Energy Charge ($ per kWh)				
On-Peak	$0.10890	$0.10605	$0.07833	$0.07816
Part-Peak	$0.10890	$0.10605	$0.07833	$0.07816
Off-Peak	$0.09030	$0.08818	$0.06127	$0.06114
Winter Energy Charge ($ per kWh)				
Part-Peak	$0.09679	$0.09441	$0.06722	$0.06707
Off-Peak	$0.08996	$0.08785	$0.06096	$0.06083
Summer Demand Charge ($ per kW)				
On-Peak	$16.39	$16.63	$15.04	$15.84
Part-Peak	$12.91	$13.74	$11.84	$13.09
Maximum	$29.18	$27.00	$26.77	$25.72
Winter Demand Charge ($ per kW)				
Maximum	$29.18	$27.00	$26.77	$25.72

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(1) Rates applicable to most retail non-municipal Power Enterprise customers (i.e., “Retail”), and certain municipal, governmental, and commercial customers, referred to as “Enterprise” customers.
(2) Rates applicable to certain municipal, governmental, and commercial customers, referred to as “General Use” customers.
(3) Secondary voltage class if the service voltage is less than 2,400 volts.
(4) Primary voltage class if the customer is served from a single customer substation or without transformation at a standard primary voltage.

Source: SFPUC; Rate Schedules & Fees for Hetch Hetchy Power and CleanPowerSF (Fiscal Year 2023-24), adopted by the Commission on May 24, 2022.

The following table sets forth the average electric service rates for each major customer class for Fiscal Year 2023-24.

TABLE 14
AVERAGE ELECTRIC SERVICE RATES[1]
FOR FISCAL YEAR 2023-24

Customer Classes	Retail and Enterprise Municipal[2]	General Use Municipal[3]
Residential	$0.21278/kWh	--
Small Commercial (Demand <75 kW)	$0.27771/kWh	$0.15877/kWh
Medium Commercial (Demand 75-500kw)	$0.23357/kWh	$0.15877/kWh
Large Commercial (Demand 500-1000 kW)	$0.20045/kWh	$0.15877/kWh
Industrial (Demand >1000kW)	$0.17008/kWh	$0.15877/kWh

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(1) Average rates are calculated by dividing total revenue projections ($) by total energy usage projections (kWh) for each applicable customer class.
(2) Rates applicable to most retail non-municipal Power Enterprise customers (i.e., “Retail”), and certain municipal, governmental, and commercial customers, referred to as “Enterprise” customers.
(3) Rates applicable to certain municipal, governmental, and commercial customers, referred to as “General Use” customers.

Source: SFPUC.

The SFPUC anticipates that rates for Fiscal Years 2024-25 and 2025-26 will be adopted in Fiscal Year 2023-24, informed by the 2022 Power Rates Study and then-current market conditions.

Contractual Rate-Setting Actions

While the SFPUC is obligated to provide power at cost to MID and TID, the Districts have not elected to take such power since Fiscal Year 2017-18. The contracts governing these rates are currently expired, and discussions regarding a renegotiation are ongoing. See "THE POWER ENTERPRISE – Wholesale Electricity Sales."

PG&E Retail Rates

The rates PG&E may charge its retail customers for various categories of electricity delivery within San Francisco ("**PG&E Rates**") are established by the CPUC. PG&E Rates are adjusted by the CPUC from time to time. While previously the electric rates charged by the Power Enterprise to its customers were sometimes limited by or established with reference to PG&E rates, this is no longer true beginning in Fiscal Year 2022-23. See "– *Rate-Setting Actions*." As a result, the establishment of higher or lower PG&E Rates by the CPUC no longer has an impact on the electric rates charged by the SFPUC to affected customers or Revenues. See also "THE POWER ENTERPRISE – Power Service in San Francisco – *Pacific Gas & Electric Company*."

Billing and Collection Procedures

The SFPUC directly bills Power Enterprise customers for electric service on a monthly basis. Billing is generally based on actual meter reads, although in certain cases estimates are used (with a later adjustment). The SFPUC may impose a late charge or, for customers other than municipal customers, disconnect service for nonpayment.

Discount Programs

In 2020, the SFPUC established a temporary emergency customer assistance program for customers whose income had been impacted by COVID-19 or the City's stay-at-home orders. The temporary program provided residential Power Enterprise customers a 30% electricity bill discount. The temporary program ended March 31, 2022 and was replaced by an income-limited permanent discount program for eligible Power Enterprise customers.

Power Sales Revenues; Other Revenues

As shown in the following table, on average, approximately 88.4% of all Power Enterprise revenues were from charges for services and approximately 11.6% of all Power Enterprise revenues were from other revenues, including rents, interest income and other revenues from Fiscal Years 2017-18 through 2021-22. During such period, approximately 76.7% of charges for services revenues were from municipal sales, approximately 12.3% of charges for services revenues were from other retail sales, and approximately 11.0% of charges for services revenues were from wholesale sales. Municipal sales declined starting in Fiscal Year 2019-20 due in large part to the COVID-19 pandemic. Retail sales have increased since Fiscal Year 2018-19 due to customer growth in redevelopment areas and customers transferring to Power Enterprise service from other providers. Wholesale sales are possible when there is excess Hetch Hetchy Project generation available for sale, and are driven by supply variability. See "THE POWER ENTERPRISE – Power Enterprise Customers."

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TABLE 15
HISTORICAL REVENUES
FOR FISCAL YEARS 2017-18 TO 2021-22
(IN THOUSANDS)

Revenues:	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**2021-22**
Charges for Services					
Municipal Sales	$110,942	$122,637	$104,452	$ 96,730	$111,456
Other Retail Sales[1]	4,229	4,960	22,352	24,411	31,470
Wholesale Sales	3,501	15,812	13,876	15,106	30,179
Subtotal	**$118,672**	**$143,409**	**$140,680**	**$136,247**	**$173,105**
Rent & concessions	$ 163	$ 152	$ 191	$ 136	$ 137
Interest & investment income[2]	2,537	6,883	5,746	24	(4,001)
Trans Bay Cable License[3]	2,434	2,522	2,574	--	--
Cap & Trade Allowances[3]	2,398	2,843	3,184	2,045	674
All Others[4]	5,241	5,542	19,248	17,228	15,089
Subtotal	**$ 12,773**	**$ 17,942**	**$ 30,943**	**$ 19,433**	**$ 11,899**
Totals	**$131,445**	**$161,351**	**$171,623**	**$155,680**	**$185,004**

(1) Includes revenues recovered from services to Treasure Island. Such amounts are excluded from Revenues under the Indenture.
(2) Interest and investment loss in Fiscal Year 2021-22 mainly due to unrealized loss as a result of the decline in market value of investments related to rising interest rates.
(3) Trans Bay Cable LLC licenses and cap and trade allowances are excluded from Revenues under the Indenture.
(4) Includes federal and State grants revenue, power system impact mitigation revenue, distributed antenna system fees revenue, LCFS credits revenue, settlements revenue, sale of fixed assets revenue, sale of scrap and waste revenue, and IRS federal bond subsidies.

Source: SFPUC.

Operation and Maintenance Expenses

"Operation and Maintenance Expenses" covers the general operational expenses of the Power Enterprise. These expenses include labor and employment benefits, contractual services, materials and supplies, depreciation, general and administrative, services from other departments and other miscellaneous costs. Services from other departments include payment for services from other City departments, such as City Attorney's Office and the General Services Agency. Purchased power costs also constitute Operation and Maintenance Expenses. See "HISTORICAL OPERATING RESULTS" and "THE PUBLIC UTILITIES COMMISSION – Employee Relations."

Allocation of Costs

Various common costs incurred by the SFPUC are allocated among the Power Enterprise, the Water Enterprise and the Wastewater Enterprise. Allocations are based on the SFPUC management's best estimate and may change from year to year depending on activities undertaken by each enterprise and information available.

For Fiscal Years 2020-21 and 2021-22, the SFPUC allocated $13 million and $9 million, respectively, in administrative costs to Hetch Hetchy Water and Power. For Fiscal Years 2022-23 and 2023-24, the SFPUC budgeted $10.6 million and $11.0 million, respectively, in administrative costs to the Power Enterprise. Administrative costs are included in the financial statements under various expense categories. These costs are then allocated to Hetch Hetchy Water and the Power Enterprise in the Hetch Hetchy Water and Power financial statements, using the periodically reviewed department overhead allocation model.

Payments to/from the City

A variety of City departments provide direct services such as engineering, purchasing, legal, data processing, telecommunications and human resources to the Power Enterprise and charge amounts designed to recover those costs. For Fiscal Years 2020-21 and 2021-22, these charges totaled approximately $6 million and $6 million, respectively. For Fiscal Years 2022-23 and 2023-24, the Power Enterprise budgeted $6.9 million and $6 million, respectively, for such charges.

The SFPUC has a 75-year lease agreement with the San Francisco Recreation and Parks Department for parking spaces at the Civic Center garage for use by the SFPUC's fleet of vehicles. The lease commenced on February 1, 2011. Payments to be made under this agreement total $6.274 million, all of which has been paid. The expenses and prepayments are allocated among the Power Enterprise, the Water Enterprise and the Wastewater Enterprise based on employee occupancy at 525 Golden Gate. For Fiscal Years Fiscal Years 2020-21, 2021-22, and 2022-23, the Power Enterprise's allocable shares of expenses and prepayments were $17,000 and $922,000, $18,000 and $904,000, and $17,000 and $887,000, respectively.

The SFPUC makes payments to the City relating to the financing of the SFPUC's headquarters at 525 Golden Gate Avenue, San Francisco, California. See "OBLIGATIONS PAYABLE FROM REVENUES – Other Obligations Payable from Revenues."

The SFPUC receives payments from other agencies of the City for their share of the proportionate cost of the service provided to them. For Fiscal Years 2020-21 and 2021-22, these service deliveries, the majority of which constitute municipal sales, generated approximately $82 million and $116 million in revenues for the Power Enterprise, respectively. Revenues from service deliveries averaged approximately 68% of Power Enterprise revenues for Fiscal Years 2017-18 through 2021-22. See "– Power Sales Revenues; Other Revenues." For Fiscal Years 2022-23 and 2023-24, the Power Enterprise budgeted $150.0 million and $161.9 million in revenues, respectively, from service deliveries to other City agencies.

Financial Management Policies

The SFPUC makes no representation that the following policies will not be revised or amended and, except to the extent required for compliance with the terms of the Indenture, makes no representation that these policies will be followed by the SFPUC.

Debt Management Policies and Procedures. The SFPUC has established "Debt Management Policies and Procedures" (the "**Debt Policies**") for debt financing under its jurisdiction. The SFPUC has also established separate "SFPUC Municipal Securities Disclosure Policies and Procedures" (the "**Disclosure Policies**") which are appended to the Debt Policies. The Debt Policies, including the appended Disclosure Policies, apply to all SFPUC enterprises, including the Power Enterprise, and are intended to enable the SFPUC to effectively manage its debt issuance and administration practices and comply with all debt issuance and administration rules and regulations. The Debt Policies are reviewed bi-annually and revised, as necessary, with Commission approval.

The Commission adopted revisions to the Debt Policies in 2019. Such revisions included adding two amendments that were made to Rule 15c2-12, effective February 27, 2019 (the "**Rule 15c2-12 Amendments**") to the Disclosure Policies. See the Listed Events 15 and 16 in "APPENDIX E – FORM OF CONTINUING DISCLOSURE CERTIFICATE." In addition, pursuant to the Disclosure Policies, the SFPUC developed a Disclosure Practices Working Group (the "**DPWG**"). The DPWG meets at least semiannually to better and more effectively administer the SFPUC's continuing disclosure requirements, particularly to monitor the SFPUC's financial obligations and financial difficulties, if any, in light of the Rule 15c2-12 Amendments. The DPWG is comprised of the Chief Financial Officer and Assistant General Manager, Business Services, two Deputy Chief Financial Officers and the Debt Manager of the SFPUC, with legal consultation from the City Attorney's Office and the SFPUC's outside disclosure counsel.

Debt Service Coverage Policy. The Commission adopted a debt service coverage policy (the "**Debt Service Coverage Policy**") on March 28, 2017, which applies to all SFPUC enterprises, including the Power

Enterprise. Pursuant to the Debt Service Coverage Policy, to ensure that the SFPUC maintains access to low-cost capital and retains financial flexibility for contingencies, the SFPUC will aim to adopt budgets, rates and financial plans that generate revenues such that debt service coverage on an Indenture basis (including certain available fund balances) will be at least 1.35 times and debt service coverage on a current basis will be at least 1.10 times.

The Indenture includes a rate covenant of 1.25 times coverage (including certain available fund balances). See "SECURITY FOR THE BONDS – Rate Covenant; Rates and Charges."

Capital Financing Policy. The Commission adopted a capital financing policy (the "**Capital Financing Policy**") on March 28, 2017, which applies to all SFPUC enterprises, including the Power Enterprise. The SFPUC relies mainly on current revenue and debt financing to pay for capital assets or improvements. According to the Capital Financing Policy, the appropriate mix of current revenues versus debt financing depends, in part, on the capital investment lifecycle of the Power Enterprise. Accordingly, the SFPUC has determined that over the 10-year financial planning horizon, the SFPUC will aim to pay for a minimum ranging between 15% and 30% of the Power Enterprise's capital budget from current revenues.

Fund Balance Reserve Policy. The Commission adopted a fund balance reserve policy (the "**Fund Balance Reserve Policy**") on February 28, 2017, which applies to all SFPUC enterprises, including the Power Enterprise. Pursuant to the Fund Balance Reserve Policy, for the time period covered in the 10-year financial plan, the SFPUC will aim to propose operating and capital budgets and rates for adoption such that the Fund Balance Reserve totals a minimum of 90 days or 25% of operations and maintenance expenses (including programmatic projects and excluding debt service and revenue-funded capital) throughout the forecast period. Amounts in excess of such minimum will be considered for contingencies and rate stabilization.

Investment of SFPUC Funds

The SFPUC's pooled deposits and investments are invested pursuant to State law and the investment policy established from time to time by the City Treasurer and overseen by the Treasury Oversight Committee. The current policy seeks the preservation of capital, liquidity and yield, in that order of priority. Under the City Treasurer's current investment procedures, the SFPUC's pooled deposits and investments are invested in the City's larger pooled investment fund (the "**City Pool**"). Among other purposes, the City Pool serves in effect as a disbursement account for expenditures from the City's various segregated and pooled funds. Investments are generally made so that securities can be held to maturity. The City Treasurer calculated the weighted average maturity of these investments as of June 30, 2023, to be 442 days (most recent data available).

The following table sets forth the approximate book values of the investments held in the City Pool reported by the City Treasurer as of June 30, 2023. The Power Enterprise's pooled deposits and investments accounted for approximately $247.4 million, or approximately 1.5%, of such amounts. The Water Enterprise and the Wastewater Enterprise each have their own pooled deposits and investments that are separate from the Power Enterprise.

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TABLE 16
CITY POOLED INVESTMENT FUND
(AS OF JUNE 30, 2023)

Investments	Book Value (millions)
U.S. Treasuries	$3,626.3
Federal Agencies	7,353.5
Public Time Deposits	30.0
Negotiable CDs	1,920.0
Commercial Paper	389.5
Money Market Funds	2,573.9
Supranationals	643.2
Total	$16,536.4

Source: Office of the Treasurer and Tax Collector of the City and County of San Francisco.

The SFPUC's non-pooled deposits and investments consist primarily of funds related to the SFPUC's outstanding bonds, which are invested pursuant to policy established by the SFPUC, subject to the restrictions contained in the applicable bond documentation.

Risk Management and Insurance

The SFPUC's risk management program encompasses both self-insured and insured coverage. Risk assessments and coverage are coordinated by the SFPUC Enterprise Risk Manager through the City Office of Risk Management. With certain exceptions, the City and SFPUC's general approach is to first evaluate self-insurance for the risk of loss to which it is exposed. Based on this analysis, the SFPUC has determined that mitigating risk through a "self-retention" mechanism is more economical as it manages risks internally and administers, adjusts, settles, defends and pays claims from budgeted resources (i.e., pay-as-you-go). When economically more viable or when required by debt financing covenants, the SFPUC obtains commercial insurance.

At least annually, the City reviews and actuarially determines general liability and workers' compensation liabilities, which are recorded as "Damages and Claims" and "Accrued Worker's Compensation" in the financial statements.

The SFPUC does not maintain commercial earthquake coverage, with certain minor exceptions, such as a sub-limit for fire-sprinkler leakage due to earthquake under the Property Insurance program.

The following is a summary of the SFPUC's coverage approach to risk:

Primary Risks	Typical Coverage Approach
General Liability	Self-Insured
Property	Purchased Insurance & Self-Insured
Electronic Data Processing	Purchased Insurance & Self-Insured
Workers' Compensation	Self-Insured through City-Wide Pool
Other Risks	**Typical Coverage Approach**
Surety Bonds	Purchased and Contractually Transferred
Professional Liability	Combination of Self-Insured, Purchased Insurance and Contractual Risk Transfer
Errors & Omissions	Combination of Self-Insured, Purchased Insurance and Contractual Risk Transfer
Builders Risk	Purchased Insurance & Contractual Risk Transfer
Public Officials Liability	Purchased Insurance
Employment Practices Liability	Purchased Insurance
Crime	Purchased Insurance
Cyber Liability	Purchased Insurance

The SFPUC's property risk management approach varies depending on whether the facility is currently under construction, or if the property is part of revenue-generating operations. The majority of purchased insurance is for revenue-generating facilities, debt-financed facilities and mandated coverage to meet statutory or contractual requirements. The SFPUC's insured coverage is through a City-wide purchased insurance policy which provides up to $1 billion of coverage against certain losses with respect to scheduled property. Such scheduled property includes certain properties of the City and its departments, including, but not limited to, the SFPUC's enterprises which alone total approximately $2.8 billion. The Power Enterprise has included on the insurance schedule the Kirkwood and Holmes Powerhouses, the Intake and Calaveras Switchyards, the Warnerville Substations, certain penstocks and a number of other facilities with a total combined value of approximately $986 million.

Additionally, the SFPUC acknowledges the importance of aligning strategic planning to the risk management process and has implemented an Enterprise Risk Management ("**ERM**") program to meet this need. The framework provides a strategic approach to managing operational risks. The ERM program has been implemented thus far for Information Technology Services, the Power Enterprise and CleanPowerSF and plans are in place to continue implementation across the remainder of the SFPUC as needed.

Capital Project Risk Management. For capital construction projects, the SFPUC has utilized traditional contractual risk transfer, contractor-controlled insurance programs or other alternative insurance programs. Under the latter two approaches, the insurance program usually provides coverage for the entire construction project, along with multiple risk coverages, such as general liability and workers compensation. When a contractual risk transfer is used for capital construction risks, the SFPUC requires each contractor to provide its own insurance, while ensuring that the full scope of work be covered with satisfactory levels to limit the SFPUC's risk exposure balanced by that which is commercially available.

Performance bonds are required, and Builder's Risk insurance must be purchased, in most phases of the construction contracting process for such phases as bid, performance, and payment or maintenance. Additionally, bonds may be required in other contracts where goods or services are provided to ensure compliance with applicable terms and conditions such as warranty.

Professional liability policies are either directly purchased insurance on behalf of the SFPUC, transferred through contract to the contracted professional, or retained through self-insurance on a case-by-case basis depending on the size, complexity or scope of construction or professional service contracts. Professional liability policies are typically purchased for services provided by engineers, architects, design professionals and other licensed or certified professional service providers.

Builder's Risk policies of insurance are required to be provided either through an owner-controlled insurance program or the contractor on all construction projects for the full value of the construction.

HISTORICAL OPERATING RESULTS

The historical results of operations reflected in the following table are based on the tables contained in the SFPUC's audited financial statements entitled "Statements of Revenues, Expenses and Changes in Net Position" and "Statements of Cash Flows" for the Fiscal Years listed. See "APPENDIX B – SFPUC POWER ENTERPRISE FINANCIAL STATEMENTS."

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TABLE 17
POWER ENTERPRISE
HISTORICAL REVENUES AND OPERATION AND MAINTENANCE EXPENSES
FOR FISCAL YEARS ENDED JUNE 30
(IN THOUSANDS)[(1)]

	2018	2019	2020	2021	2022
OPERATING & INVESTMENT REVENUE[(2)]					
Charges for Services[(3)]	$118,672	$143,409	$140,680	$136,247	$173,105
Rent & Concessions	163	152	191	136	137
Interest & Investment Income[(4)]	2,537	6,883	5,746	24	(4,001)
Other Non-Operating Revenues[(5)]	10,073	10,907	25,006	19,273	15,763
Total Revenues	**$131,445**	**$161,351**	**$171,623**	**$155,680**	**$185,004**
OPERATING & MAINTENANCE EXPENSE					
Salary & Fringe Benefits[(6)]	$34,950	$37,583	$40,712	$40,756	$34,646
Contractual Services	5,526	6,086	7,742	8,726	9,604
Purchased Power & Related Costs[(7)]	34,435	47,437	48,831	42,693	58,252
Materials & Supplies	1,541	672	2,260	1,990	2,270
Depreciation & Amortization[(8)]	14,049	14,484	15,723	15,627	17,628
Services of Other Departments	5,848	6,833	6,426	6,137	6,253
General & Administrative[(9)]	4,238	3,660	4,370	6,074	4,654
Other[(10)]	18,808	5,933	22,063	23,635	23,040
Total Operating Expenses	**$119,395**	**$122,688**	**$148,127**	**$145,638**	**$156,347**
OPERATING AND INVESTMENT INCOME	**$12,050**	**$38,663**	**$23,496**	**$10,042**	**$28,657**
COVERAGE CALCULATION					
Operating & Investment Income	$12,050	$38,663	$23,496	$10,042	$28,657
– Revenue and Expenses Excluded from Coverage Calculation[(1)]	(9,194)	(8,478)	(12,868)	(5,731)	6,707
+ Adjustment to Investing Activities	419	(2,606)	101	1,902	3,297
+ Depreciation & Non-Cash Expenses	14,131	14,604	27,470	23,037	18,351
+ Changes in Working Capital	13,281	(2,386)	3,243	(18,641)	(2,702)
= "Net Revenues"[(11)]	**$30,687**	**$39,798**	**$41,442**	**$10,609**	**$54,310**
+ Other "Available Funds"[(2)]	36,525	31,215	39,119	23,569	44,315
Funds Available for Debt Service	$67,212	$71,013	$80,561	$34,178	$98,625
Revenue Bond Debt Service	$2,570	$2,569	$2,568	$2,567	$2,565
DEBT SERVICE COVERAGE[(12)]					
Indenture Basis (Including "Available Funds")[(1)(13)(14)]	26.15x	27.64x	31.37x	13.31x	38.45x
Current Basis[(1)(15)]	11.94x	15.49x	13.44x	3.67x	20.71x

(1) Operating and Investment Income presented in this table differs from the Change in Net Position presented in the Statement of Revenues, Expenses and Changes in Net Position in the audited financial statements. This table may exclude certain elements of non-operating revenue and expenses included in the Statements of Revenues, Expenses and Changes in Net Position. Revenues and expenses associated with Treasure Island Development, Transbay Cable Proceeds, cap and trade allowances, power system impact mitigation, federal subsidies, and other revenues deemed unavailable to pay debt service have been excluded. LCFS revenue is excluded in Current Basis coverage but included for Indenture Basis coverage calculation.

(Footnotes continued on the following page.)

(2) Excludes operating results for CleanPowerSF.
(3) Increase in Fiscal Year 2021-22 mainly due to higher wholesale electricity sales mostly from CAISO credits, increase in sales to City departments, and sales to retail customers due to higher consumption.
(4) Decrease in Fiscal Year 2021-22 mainly due to unrealized loss attributed to decrease in market value of cash and investments held in the City Treasury.
(5) Decrease in Fiscal Year 2021-22 due to lower power system impact mitigation payments and cap and trade revenue received.
(6) Decrease in Fiscal Year 2021-22 mainly due to lower pension obligations based on actuarial reports.
(7) Increase in Fiscal Year 2021-22 mainly due to increased wholesale distribution rates.
(8) Increase in Fiscal Year 2021-22 mainly due to additional buildings, structures, and equipment placed in service.
(9) Decrease in Fiscal Year 2021-22 mainly due to lower litigation expenses.
(10) Comprised primarily of capital related expenditures. Decrease in Fiscal Year 2018-19 mainly due to several projects being placed in service and capitalized.
(11) "Net Revenue" is presented on a cash basis.
(12) Coverage does not include debt service on the Subordinate Obligations, the Power Enterprise's share of lease payments associated with the 2009 Golden Gate COPs and debt service on Commercial Paper Notes.
(13) Per the Indenture, in addition to current year cash flow, coverage calculation includes certain "Available Funds," which are unencumbered amounts, and cash and investments held by the Treasurer, that the SFPUC reasonably expects would be available, as of the date of calculation, to pay debt service.
(14) Unaudited. Calculated as ratio between Net Revenues plus "Available Funds" over debt service on all senior lien obligations.
(15) Unaudited. Calculated as ratio between Net Revenues over debt service on all senior lien obligations; excludes "Available Funds." LCFS revenue is excluded in Current Basis coverage; in Fiscal Years 2019-20, 2020-21 and 2021-22, LCFS revenue was $6.9 million, $1.2 million, and $1.2 million, respectively.

Source: SFPUC, Hetch Hetchy Water and Power and CleanPowerSF Audited Financial Statements

Fiscal Year 2022-23 Fourth Quarter Budgetary Report

The SFPUC's Fiscal Year 2022-23 Fourth Quarter Budgetary Report through June 2023 (the "**Q4 Budgetary Report**") was presented to the Commission on September 20, 2023. Budgetary reports are prepared on a budgetary basis and the projections in the Q4 Budgetary Report reflect variations from the SFPUC's original budget for Fiscal Year 2022-23, which was adopted in February 2022 (the "**Original Fiscal Year 2022-23 Budget**"). Such projections do not necessarily correspond to similar line items presented in Table 15 (Historical Revenues for Fiscal Years 2017-18 to 2021-22) or Table 17 (Power Enterprise Historical Revenues and Operation and Maintenance Expenses for Fiscal Years Ended June 30), each of which are based upon the SFPUC's GAAP financial statements for the Power Enterprise.

The Q4 Budgetary Report projects positive operating results for the Power Enterprise for Fiscal Year 2022-23, with overall year end results better than the Original Fiscal Year 2022-23 Budget and Fiscal Year 2021-22 actual results, and a higher fiscal year end fund balance on a budgetary basis. Due to the timing of the adoption of the final 2022 Power Rates Study, which did not allow the assumptions in such study to be reflected in the Original Fiscal Year 2022-23 Budget, retail sales, which include charges for services for municipal sales and other retail sales, are projected to be approximately $10.2 million below the Original Fiscal Year 2022-23 Budget of $171.4 million (although approximately $8.0 million higher than Fiscal Year 2021-22 actual results on a budgetary basis). See "FINANCIAL OPERATIONS – Rate-Setting Process; Rates – *Cost of Service Studies*" and " – *Rate-Setting Actions*." Wholesale sales, however, are projected to be approximately $36.0 million above the Original Fiscal Year 2022-23 Budget of $18.3 million (approximately $24.1 million higher than Fiscal Year 2021-22 actual results on a budgetary basis), due primarily to higher power prices combined with higher generation due to the winter storms at the end of 2022 and beginning of 2023. See "THE HETCH HETCHY PROJECT – Winter Storms in Fiscal Year 2022-23." Interest income and purchased power costs, including transmission and distribution costs, are also projected to be higher than the amounts in the Original Fiscal Year 2022-23 Budget and Fiscal Year 2021-22 actual results on a budgetary basis. See "THE HETCH HETCHY PROJECT – Variability of Hydroelectric Generation" and "CERTAIN RISK FACTORS – Changes in Transmission and Distribution Service Costs." Finally, the SFPUC projects to meet or exceed all of its financial policy minimums and coverage ratios at year end for the Power Enterprise. See "FINANCIAL OPERATIONS – Financial Management Policies."

The Q4 Budgetary Report includes projections. See "FORWARD-LOOKING STATEMENTS." Final Fiscal Year 2022-23 results will be published in the SFPUC's audited financial statements for Fiscal Year 2022-23, which are expected to be released in December 2023.

CERTAIN RISK FACTORS

The following section discusses certain risk factors that should be considered by potential investors, along with all other information presented in this Official Statement, in evaluating the risks inherent in the purchase of the 2023A Bonds. The following discussion is not meant to be a comprehensive or definitive list of the risks associated with an investment in the 2023A Bonds. Any one or more of the risk factors discussed below, among others, could adversely affect the ability of the SFPUC to pay principal of or interest on the 2023A Bonds or lead to a decrease in the market value and/or in the liquidity of the 2023A Bonds. The order in which this information is presented does not necessarily reflect the relative importance of the various issues. There can be no assurance that other risk factors not discussed herein will not become material in the future, and the SFPUC has not undertaken to update investors about the emergence of other risk factors in the future.

General

The ability of the SFPUC to comply with its covenants under the Indenture and to generate Revenues sufficient to pay the Operation and Maintenance Expenses of the Power Enterprise and principal of and interest on the Bonds may be adversely affected by actions and events outside of the control of the SFPUC and may be adversely affected by actions taken (or not taken) by regulatory agencies, voters, Power Enterprise customers or PG&E. Among other matters, general and local economic conditions, weather or climatic conditions or natural or other disasters or the availability of insurance relating to any such events, and changes in law and government regulations could adversely affect the amount of Revenues realized by the SFPUC or significantly raise the cost of operating the Power Facilities. See "THE POWER ENTERPRISE – Recent Factors Impacting Power Revenues."

In addition, the realization of future Revenues is subject to, among other things, the capabilities of management of the SFPUC, the ability of the SFPUC to provide service to its customers, the ability of the SFPUC to establish, maintain and collect charges from its customers and the ability of the SFPUC to establish, maintain and collect rates and charges sufficient to pay for Operation and Maintenance Expenses of the Power Enterprise, the Bonds and other obligations payable from Revenues. See "FINANCIAL OPERATIONS" and "OBLIGATIONS PAYABLE FROM REVENUES."

Limited Obligations

If the SFPUC defaults on its obligations to make debt service payments on the Bonds, the Trustee has the right under the Indenture to accelerate the total unpaid principal amount of the Bonds. However, in the event of a default and such acceleration, there can be no assurance that the SFPUC, and correspondingly the Trustee, will have sufficient moneys available for payment of the Bonds.

The SFPUC is not obligated to pay the principal of, premium, if any, or interest on the 2023A Bonds from any source of funds other than the Revenues of the Power Enterprise, after payment of Operation and Maintenance Expenses and any Priority R&R Fund Deposits. The General Fund of the City is not liable for the payment of the principal of, premium, if any, or interest on the 2023A Bonds, and neither the credit nor the taxing power of the City is pledged to the payment of the principal of, premium, if any, or interest on the 2023A Bonds. The SFPUC has no taxing power. The 2023A Bonds are not secured by a legal or equitable pledge of, or charge, lien or encumbrance upon, any of the property of the City or of the SFPUC or any of its income or receipts, except Revenues, after payment of Operation and Maintenance Expenses and any Priority R&R Fund Deposits.

Risks Related to Power Enterprise Operations and Facilities

The operation of the Power Facilities, including the Hetch Hetchy Project, is subject to a number of risks which could adversely affect the ability of the Power Enterprise to generate electricity or deliver electricity to its customers. Such interruptions in generation or transmission could adversely impact Revenues or require the SFPUC to increase expenditures for repairs and replacement power. Such Revenue losses or increased operating expenses, if significant, could adversely impact the SFPUC's ability to pay debt service on the Bonds.

Lack of Supply Diversity. Although the SFPUC has been developing alternative sources of generation, the Power Enterprise's electric supply resources remain highly concentrated. Developments with respect to hydroelectric generation in general, or the Hetch Hetchy Project in particular, could have an amplified effect on the availability and cost of electricity required to meet the needs of the Power Enterprise's customers. See "THE HETCH HETCHY PROJECT."

Aging Facilities; Failure of Key Facilities. The Power Facilities vary in age, condition and estimated service life remaining. The average useful life of generating assets is about 30 years while the average useful life of transmission assets is approximately 80 years. Certain portions of the Power Facilities are near the end of their useful life. Long-lived assets result in decreased reliability due to unplanned outages and place a greater maintenance burden on Power Enterprise operations. Aging generating and transmission assets, if left unaddressed, could result in increased system failures, including losses of Hetch Hetchy Project electric generation delivered to San Francisco, increasing the Power Enterprise's reliance on purchased power. See "THE HETCH HETCHY PROJECT – Physical Condition of Facilities."

Limited Redundancy. Certain Power Facilities have limited redundancy, which reduces the SFPUC's ability to take components of the system out of service for maintenance and repairs, and to provide backup facilities in cases of failure. Any failure of the Power Facilities could result in an increase in the Power Enterprise's purchased power or transmission costs.

Rainfall Variability and Drought. Hydroelectric generation by the Hetch Hetchy Project is subject to seasonal and annual variations in rainfall. See "THE HETCH HETCHY PROJECT – Variability of Hydroelectric Generation."

Water System Operation Requirements. The SFPUC's "water first" policy requires the Power Enterprise to coordinate electricity generation with water releases from Hetch Hetchy Reservoir required to serve the needs of Water Enterprise customers, which has an impact on the Power Enterprise's ability to schedule generation in a manner that would maximize Revenues and minimize Operation and Maintenance Expenses. The price of electricity is subject to market conditions and seasonal market variations which frequently result in lower costs per MWh during the early part of the calendar year when more water is released to serve the requirements of the Water Enterprise and higher costs per MWh in the latter part of the calendar year when less water is released to serve the requirements of the Water Enterprise. See "THE HETCH HETCHY PROJECT – Hetch Hetchy Project Operations – *Water First Policy*" and "– Variability of Hydroelectric Generation."

Unavailability of Transmission. The SFPUC's transmission assets are interconnected to the CAISO's system. The unavailability of transmission assets due to failure or maintenance outage could require the Power Enterprise to obtain alternative transmission services from other utilities through established interties to deliver energy to the CAISO's transmission network, which could result in increased transmission costs to the Power Enterprise. See "THE POWER ENTERPRISE – Transmission and Distribution."

Interconnection Delays and Costs. In 2016, the SFPUC began taking distribution service from PG&E under its FERC-approved open access tariff (see "THE POWER ENTERPRISE – Transmission and Distribution"). Since that time, PG&E has updated and modified its distribution terms, which has had the effect of delaying grid access for certain SFPUC customers or increasing costs of service for the SFPUC. The SFPUC has challenged PG&E's distribution term modifications and sought grandfathered service under the tariff all before the FERC, and the SFPUC has further litigated FERC decisions in the federal courts. Starting in July 2018, the City required the SFPUC to provide the Board of Supervisors with quarterly reports identifying projects with applications to PG&E for electric service. Such reports identify any concerns with securing temporary and permanent power or other obstacles that could increase costs or delay service to City customers, and provide updates on the status of disputes with PG&E before the FERC or in other forums. Since November 2018, the SFPUC has provided reports on 142 projects that have experienced such delays or other obstacles. At present, the SFPUC has 42 projects with active applications for distribution service that have experienced interconnection delays or increased project costs. Thirty-four City projects have been released to obtain electric service from PG&E.

To mitigate the impacts of such connection delays and increased costs, the City is investing in its own distribution systems (see "POWER ENTERPRISE CAPITAL PROGRAM – 2024 Capital Plan Projects – *Power Enterprise Projects – Transmission/Distribution/Alternative Transmission*"). The City has also indicated an interest in acquiring the PG&E transmission and distribution systems serving San Francisco (see "THE PUBLIC UTILITIES COMMISSION – Proposed Transaction with Pacific Gas & Electric Company").

Casualty Losses. Damage to the Power Facilities from a variety of sources could impair or degrade the Power Enterprise's ability to deliver electricity to its customers, perhaps for an extended period of time. The SFPUC maintains a risk management program which includes both insured and self-insured coverages; however, the program does not provide, and the SFPUC is not required to obtain, coverage for every type of loss. For example, damage attributable to seismic events and environmental pollution are excluded from such coverages. In situations where the SFPUC has not purchased commercial coverage, the Power Enterprise has a 'self-retention' program that it administers and retains budgeted resources internally to provide coverage for loss liabilities. See "FINANCIAL OPERATIONS – Risk Management and Insurance." There can be no assurance in the event of a casualty loss that insurance proceeds or the SFPUC's budgeted resources will be available in amounts sufficient to make necessary capital repairs and mitigate other consequential losses.

Seismic Hazards. Certain facilities and customers of the Power Enterprise are located in seismically active regions of California. See "– Seismic Considerations."

Other Natural and Man-Made Disasters. Other disasters, including without limitation wildfires, flooding and landslides, or man-made disasters, could interrupt operation of the Hetch Hetchy Project and other Power Facilities. See "THE HETCH HETCHY PROJECT – Wildfire Considerations."

Operational Liability. The SFPUC operates high voltage transmission lines through right of way corridors that extend approximately 134 miles across forested and populated areas between the Sierra Nevada Mountains and the Newark Substation. These high voltage transmission lines can cause fires, electrocution or other casualties if safe clearance zones are not maintained or are accidentally breached, potentially resulting in significant liability losses. The SFPUC performed a condition assessment of its transmission line right of way and has identified potential hazards (clearance detections), including those due to insufficient ground clearance and those caused by encroachments or structures improperly located by other local jurisdictions, utilities or individuals in proximity to the transmission lines. Immediate measures were taken to enhance warning notification and exclude access at detection points. The SFPUC has prioritized these detection points based on risk and developed a capital program to mitigate these clearance issues. The SFPUC anticipates that identified potential hazards are likely to be fully mitigated by 2030. See "THE HETCH HETCHY PROJECT – Wildfire Considerations."

Safety and Security. Military conflicts and terrorist activities could also adversely impact the operations of the Power Enterprise or the finances of the SFPUC. The SFPUC plans and prepares for emergency situations and related responses to maintain critical services. However, there can be no assurance that any such safety and security measures will prove adequate in the event of terrorist activities directed against the Power Facilities or that costs of security measures will not be greater than presently anticipated.

Statutory and Regulatory Compliance. The operation of the Power Facilities and a retail electric service program is subject to a variety of federal and State statutory and regulatory requirements concerning matters such as reliability, reporting and the scheduling of electrical generation and transmission. Non-compliance with applicable laws or regulations could result in fines and penalties being assessed against the SFPUC or claims being made by private parties. Changes in the scope and standards for electricity generation, transmission and distribution systems such as the Power Facilities may also lead to administrative orders issued by federal or State regulators. Future compliance with increased regulatory requirements or enforcement orders could impose substantial additional operating expenses on the SFPUC.

Endangered Species. Various aquatic species (including native fishes) present in the Tuolumne River and Bay Area streams (e.g., Alameda, San Mateo and Pilarcitos Creeks) are either listed or candidates for listing under the State or federal endangered species acts. New listings and future enforcement actions under the acts, or conditions placed in permits to undertake construction for certain projects, could potentially directly affect water flow and electrical generation at the Hetch Hetchy Project. See "THE HETCH HETCHY PROJECT – FERC Proceedings Regarding Relicensing of the New Don Pedro Project."

Labor Actions. The Charter prohibits SFPUC and other City employees from striking. Nonetheless, any work stoppage or other labor action could limit the SFPUC's ability to operate the Power Facilities or provide service and adversely impact Revenues. On July 24, 2023, the PERB ruled in favor of the SEIU and IFPTE, concluding that certain City Charter provisions prohibiting strikes by City employees are invalid, affirming an earlier ruling of an administrative law judge that such City Charter provisions violate the Meyers-Milias-Brown Act. The City has filed a notice of appeal to the California Court of Appeal with respect to the PERB decision. The City can give no assurance whether the appeal will be successful. See also "THE PUBLIC UTILITIES COMMISSION – Employee Relations."

Skilled Labor. Operation of a utility requires a skilled workforce. Tight labor markets and work places in high-cost regions, such as the San Francisco Bay Area, or remote mountainous regions, such as where Hetch Hetchy Project operations are located, may increase the difficulty in recruiting and retaining a skilled workforce. The SFPUC is currently experiencing challenges in hiring and retaining certified professional mechanical and electrical engineers with power systems experience as well as experienced trades such as power system operators, technicians and lineworkers. Although the Power Enterprise has been able to deliver uninterrupted power to its retail and wholesale customers, challenges in hiring and retaining a skilled workforce could potentially impact the SFPUC's ability to operate the Power Facilities in the future.

Proposals to Restore Hetch Hetchy Valley. Some environmental organizations advocate for the removal of the Hetch Hetchy Reservoir and the restoration of Hetch Hetchy Valley. For example, an initiative ordinance qualified for the November 2012 City ballot with support from an organization called "Restore Hetch Hetchy" and would have required the City to identify alternative sources of water and, subject to certain additional conditions, end its use of the Hetch Hetchy Reservoir. That reservoir supplies the Kirkwood and Moccasin Powerhouses, which combined generate approximately 57% of the electricity produced by the Hetch Hetchy Project. This initiative was rejected by voters of San Francisco.

Previous studies have examined proposals to remove Hetch Hetchy Reservoir. For example, a 2006 report by the California Department of Water Resources and the California Department of Parks and Recreation concluded that it is technically feasible to restore Hetch Hetchy Valley but cautioned financial feasibility. The study estimated that the total cost of such a project would range from $3 billion to $10 billion in 2006 (approximately $4 billion to $13 billion in 2020, adjusted for inflation). The State agencies also concluded that the initial planning effort would take up to 10 years to complete and cost an additional $65 million. A project to restore the Hetch Hetchy Valley likely would substantially increase the Power Enterprise's annual cost of power.

In 2015, Restore Hetch Hetchy filed a complaint against the City alleging that the SFPUC's operation of Hetch Hetchy Reservoir is an unreasonable method of diversion of water in violation of the California Constitution because of the O'Shaughnessy Dam's location within a national park. The case has been fully and finally resolved in the City's favor. In addition, in 2019, Restore Hetch Hetchy commissioned a report that concluded that restoring Hetch Hetchy Valley and opening it to greater public use had an economic use value between $2 billion to $5 billion and an intrinsic passive-use value of over $100 billion over a 50-year period. No formal federal, State or local policy proposals have been made in response to the report.

The SFPUC is unable to predict whether any similar initiatives, or similar federal or State legislation, might be approved by the voters or adopted by legislative bodies in the future, or the potential impact of such efforts on the SFPUC or the Power Enterprise. Any such legislation or litigation, if successful, could impose substantial additional operating and capital expenses on the Power Enterprise.

Inverse Condemnation

Under the doctrine of inverse condemnation (a legal concept that entitles property owners to just compensation if their private property is damaged by a public use), California courts have imposed liability on public agencies in legal actions brought by private property holders for damages caused by such public agencies' infrastructure. In *City of Oroville v. Superior Court of Butte County*, 7 Cal. 5th 1091 (2019), however, the California Supreme Court held that damage to private property must be substantially caused by an inherent risk presented by the deliberate design, construction or maintenance of the public improvement. Thus, if the inherent risks associated with the SFPUC's facilities, including water storage or transportation facilities or electrical distribution and transmission lines, as deliberately designed, constructed or maintained, are determined to be the substantial cause of damage to private property from flooding, fire or otherwise, and the doctrine of inverse condemnation applies, the SFPUC could be liable for direct and indirect property damage to private parties and such liability, in the aggregate, could be substantial. In addition to such claims for property damage, the SFPUC could also be liable for punitive damages and other damages under other theories of liability, including if the SFPUC were found to have been negligent, which liability, in the aggregate, could be substantial. See "THE HETCH HETCHY PROJECT – Wildfire Considerations."

Seismic Considerations

Certain distribution and transmission facilities of the Power Enterprise and the Power Enterprise's principal customers are located in seismically active regions of California. The San Andreas Fault lies immediately west of San Francisco, and the Hayward fault is approximately fifteen miles to the east of San Francisco. A third major fault, the Calaveras Fault, is a branch of the Hayward Fault and lies east of the Hayward Fault.

During the past 150 years, the San Francisco Bay Area has experienced several major and numerous minor earthquakes. The largest was the 1906 San Francisco earthquake along the San Andreas Fault with an estimated magnitude of 8.2 on the Richter scale. The 1868 Hayward earthquake along the Hayward Fault had an estimated magnitude of between 6.8 and 7.0 on the Richter scale. The 1989 Loma Prieta earthquake along the San Andreas Fault had an estimated magnitude of 6.9 on the Richter scale. The most recent significant earthquake was the 2014 South Napa earthquake on the West Napa Fault, the northern extension of the Calaveras Fault, which had a magnitude of 6.0 on the Richter scale and an epicenter near the city of Napa, approximately 50 miles north of San Francisco. According to United States Geological Survey findings, a significant earthquake along these or other faults is probable during the period the 2023A Bonds will be outstanding. A significant earthquake in San Francisco could adversely affect power deliveries, short-term or long-term demand, or the ability of Power Enterprise customers to pay for electric service.

The Hetch Hetchy Project is located largely in Yosemite National Park, one of the most stable seismic zones in California, and there are no known major faults in the area in which its large generation facilities are located. The SFPUC therefore considers the risk of either a major earthquake in that region or an earthquake in the San Francisco Bay Area of a magnitude sufficient to have a significant impact on the Hetch Hetchy Project to be low. Many of the Hetch Hetchy Project's generation and transmission facilities were constructed prior to 1980, however, and have not been retrofitted to meet current seismic standards. As the SFPUC continues to upgrade and replace facilities, design improvements to meet, or exceed, current seismic standards are included.

The SFPUC's in-city assets, including for example certain distribution systems, renewable energy generating facilities and streetlights, along with facilities in other locations in the larger Bay Area, such as substations located near SFO, are expected to be subject to greater and more frequent seismic activity than the facilities of the Hetch Hetchy Project as sections of the Hayward Fault, San Andreas Fault and Calaveras Fault are near San Francisco.

With certain minor exceptions, the SFPUC does not maintain commercial earthquake insurance coverage for the Hetch Hetchy Project or other Hetch Hetchy Water and Power facilities. See "FINANCIAL OPERATIONS – Risk Management and Insurance."

A major seismic event affecting critical operational facilities of the Power Enterprise could result in electrical generation service interruptions necessitating that the Power Enterprise purchase wholesale electricity, based on availability and market price, to replace any generation capacity taken offline by the seismic event. Particularly severe seismic events could also significantly impact the wholesale electricity market, available transmission resources and customer demand.

Climate Change

Impact on City of San Francisco. Numerous scientific studies on global climate change show that, among other effects on the global ecosystem, sea levels will rise, extreme temperatures, and extreme weather events will become more frequent as a result of increasing global temperatures attributable to atmospheric pollution.

The Fourth National Climate Assessment, published by the United States Global Change Research Program in November 2018 ("**NCA4**"), finds that more frequent and intense extreme weather and climate-related events, as well as changes in average climate conditions, are expected to continue to damage infrastructure, ecosystems and social systems over the next 25 to 100 years. NCA4 states that rising temperatures, sea level rise, and changes in extreme events are expected to increasingly disrupt and damage critical infrastructure and property and regional economies and industries that depend on natural resources and favorable climate conditions. Disruptions could include more frequent and longer-lasting power outages, fuel shortages and service disruptions. NCA4 states that the continued increase in the frequency and extent of high-tide flooding due to sea level rise threatens coastal public infrastructure. NCA4 also states that expected increases in the severity and frequency of heavy precipitation events will affect inland infrastructure, including access to roads, the viability of bridges and the safety of pipelines.

Sea levels will continue to rise in the future due to the increasing temperature of the oceans causing thermal expansion and growing ocean volume from glaciers and ice caps melting into the ocean. Between 1854 and 2016, sea level rose about nine inches according to the tidal gauge at Fort Point, a location underneath the Golden Gate Bridge. Weather and tidal patterns, including 100-year or more storms and king tides, may exacerbate the effects of climate related sea level rise. Coastal areas like San Francisco and the Bay Area are at risk of substantial flood damage over time, affecting private development and public infrastructure, including roads, utilities, emergency services, schools, and parks. As a result, the City could lose considerable tax revenues and many residents, businesses, and governmental operations along the waterfront could be displaced, and the City could be required to mitigate these effects at a potentially material cost.

Adapting to sea level rise is a key component of the City's policies. The City and its enterprise departments have been preparing for future sea level rise for many years and have issued a number of public reports. For example, in March 2016, the City released a report entitled "Sea Level Rise Action Plan" (the "**Sea Level Rise Action Plan**"), identifying geographic zones at risk of sea level rise, providing a framework for adaptation strategies to confront these risks, and identifying data gaps and next steps. That study shows an upper range of end-of-century projections for permanent sea level rise, including the effects of temporary flooding due to a 100-year storm, of up to 108 inches above the 2015 average high tide. To implement the Sea Level Rise Action Plan, the Mayor's Sea Level Rise Coordinating Committee, co-chaired by the Planning Department and the Port of San Francisco, worked together to develop the City's Guidance for Incorporating Sea Level Rise into Capital Planning, Adopted September 2014, Revised December 2015, and Updated January 2020 and finalized the City's Sea Level Rise Vulnerability and Risk Assessment, February 2020. The City is now working to fill some of the identified data gaps from the Sea Level Rise Action Plan, including working with Lawrence Berkeley National Laboratory to understand the effect of climate change on future storms for the Bay Area. Among the findings is that storm-total precipitation for the largest types of storms is expected to produce up to 17% more rainfall by 2050 and up to 37% more rainfall by 2100. For the smaller storms, the change is expected to be even larger with increases of up to 57% more rain by 2050 and 67% more rainfall by 2100. The written reports have been finalized and the City is considering how to use the information as part of a larger data set of climate variables needed for planning purposes. The City is transitioning toward efforts that would consolidate and coordinate sea level rise adaptation and overall resilience planning so that City departments can maximize efficiency and the co-benefits of investment dollars. The City has developed and continues to refine the governance structure of the Climate Resilience Program (also known as ClimateSF) to improve how the City manages, finances and implements climate resilience projects and/or programs. Such efforts include the publication of a comprehensive Climate Action Plan in 2021. See "POWER ENTERPRISE CAPITAL PROGRAM – Climate Action Plan." For the City, climate resilience refers to a range of coordinated actions that eliminate greenhouse gas emissions and adapt the built and natural environment, while achieving a more equitable and sustainable city.

In April 2017, the Working Group of the California Ocean Protection Council Science Advisory Team (in collaboration with several state agencies, including the California Natural Resource Agency, the Governor's Office of Planning and Research, and the California Energy Commission) published a report, that was formally adopted in March 2018, entitled "Rising Seas in California: An Update on Sea Level Rise Science" (the "**Sea Level Rise Report**") to provide a new synthesis of the state of science regarding sea level rise. The Sea Level Rise Report provides the basis for State guidance to State and local agencies for incorporating sea level rise into design, planning, permitting, construction, investment and other decisions. Among many findings, the Sea Level Rise Report indicates that the effects of sea level rise are already being felt in coastal California with more extensive coastal flooding during storms, exacerbated tidal flooding, and increased coastal erosion. In addition, the report notes that the rate of ice sheet loss from Greenland and Antarctic ice sheets, while highly uncertain as to timing, could pose a particular risk of sea level rise for the California coastline.

The City has already incorporated site-specific adaption plans in the conditions of approval for certain large waterfront development projects, such as the Candlestick/Hunters Point Shipyard, Treasure Island, Pier 70 and Mission Rock projects. In November 2018, San Francisco voters approved a bond measure providing $425 million toward study and repair of the City's sea wall against seismic threats and sea level rise. This Phase 1 funding provides early investment in long-term upgrades expected to cost more than $5 billion. The Port is also working with City partner agencies and the United States Army Corps of Engineers ("**USACE**") to defend the City and its waterfront from flooding through the San Francisco Waterfront Coastal Flood Study (the "**Flood Study**"). Through the Flood Study, the Port, the City, and USACE are developing a Draft Waterfront Adaptation Plan to defend the 7.5 miles of waterfront from flood risks from Heron's Head Park to Aquatic Park. The Flood Study is one of the several coordinated waterfront resilience activities being undertaken in partnership with federal, State, and local agencies to plan for anticipated seismic activity, flooding, and sea level rise.

Portions of the San Francisco Bay Area, including San Francisco, are built on fill that was placed over saturated silty clay known as "Bay Mud." This Bay Mud is soft and compressible, and the consolidation of the Bay Mud under the weight of the existing fill is ongoing. A report issued in March 2018 by researchers at the University of California, Berkeley, and the University of Arizona suggests that flooding risk from climate change could be exacerbated in the San Francisco Bay Area due to the sinking or settling of the ground surface, known as subsidence. The study claims that the risk of subsidence is more significant for certain parts of San Francisco built on fill.

Projections of the effects of global climate change on San Francisco are complex and depend on many factors that are outside the City's control. The various scientific studies that forecast climate change and its adverse effects, including sea level rise and flooding risk, are based on assumptions contained in such studies, but actual events may vary materially. Also, the scientific understanding of climate change and its effects continues to evolve. Accordingly, the City is unable to forecast when sea level rise or other adverse effects of climate change (e.g., the occurrence and frequency of 100-year storm events and king tides) will occur. In particular, the City cannot predict the timing or precise magnitude of adverse economic effects, including, without limitation, material adverse effects on the business operations or financial condition of the City and the local economy during the term of the 2023A Bonds. While the effects of climate change may be mitigated by the City's past and future investment in adaptation strategies, the City can give no assurance about the net effects of those strategies and whether the City will be required to take additional adaptive mitigation measures. If necessary, such additional measures could require significant capital resources.

In September 2017, the City filed a lawsuit against the five largest investor-owned oil companies seeking to have the companies pay into an abatement fund to help fund infrastructure for climate change adaptation. In July 2018, the United States District Court for the Northern District of California denied the plaintiff's motion for remand to State court and then dismissed the lawsuit, which the City had joined as a plaintiff. The plaintiffs appealed these decisions to the United States Court of Appeals for the Ninth Circuit, which in May 2020 vacated the District Court's order that found the case arose under federal law, remanding the case back to the District Court to determine if there were any other grounds for federal jurisdiction. In June 2021, the United States Supreme Court declined to review the Ninth Circuit's decision. In October 2022, the District Court ordered the case remanded to State court and stayed the remand pending any appeals. The defendants have appealed the District Court's decision to the Ninth Circuit. While the City believes that the claims in this lawsuit are meritorious, it can give no assurance regarding whether the lawsuit will be successful and obtain the requested relief from the courts, or contributions to the abatement fund from the defendant oil companies.

Impact on SFPUC Power Enterprise. The issue of climate change has become an important factor in hydroelectric generation in California. There is evidence that increasing concentrations of greenhouse gases have caused and will continue to cause a rise in temperatures around the world, which will result in a wide range of changes in climate patterns. Moreover, there is evidence that a warming trend occurred during the latter part of the 20th century and will likely continue through the 21st century. These changes will have a direct effect on hydroelectric generation in California, and numerous studies on climate and water in California have been conducted to determine the potential impacts. Based on these studies, climate change could result in the following types of water resources impacts in California, including impacts on the Regional Water System and associated watersheds which may, in turn, impact hydroelectric generation:

- Reductions in the average annual snowpack versus historical levels due to a rise in the snowline and a shallower snowpack in the low- and medium-elevation zones, such as in the Tuolumne River basin, and a shift in snowmelt runoff to earlier in the year;

- Changes in the timing, intensity and annual variability of precipitation, and an increased amount of precipitation falling as rain instead of as snow;

- Long-term changes in watershed vegetation and increased incidence of wildfires that could degrade water quality;

- Sea level rise, which could cause inundation of Regional Water System assets and/or an increase in saltwater intrusion into groundwater basins;

- Increased water temperatures with accompanying adverse effects on some fisheries and water quality; and

- Changes in urban water demand.

However, other than the general trends listed above, there is no clear scientific consensus on exactly how climate change will quantitatively affect SFPUC or State water supplies and, therefore, hydroelectric generation.

Regarding sea level rise, the City has developed policies for considering the potential impact of sea level rise on City assets, "Guidance for Incorporating Sea Level Rise into Capital Planning" that requires all assets in the City's 10-year capital plan be evaluated for inundation under a variety of sea level rise scenarios plus a 1% storm. The City, through its Sea Level Rise Action Plan, will be evaluating the best approaches and potential adaptive management plans for protecting public and private assets potentially subject to inundation caused by sea level rise and large storms.

Cybersecurity

City Measures. The City, like many other large public and private entities, relies on a large and complex technology environment to conduct its operations, and faces multiple cybersecurity threats including, but not limited to, hacking, viruses, malware and other attacks on its computing and other digital networks and systems (collectively, "**Systems Technology**"). As a recipient and provider of personal, private, or sensitive information, the City has been the subject of cybersecurity incidents that have resulted in or could have resulted in adverse consequences to the City's Systems Technology and that required a response action to mitigate the consequences.

Cybersecurity incidents could result from unintentional events, or from deliberate attacks by unauthorized entities or individuals attempting to gain access to the City's Systems Technology for the purposes of misappropriating assets or information or causing operational disruption and damage. To mitigate the risk of business operations impact and/or damage from cybersecurity incidents or cyber-attacks, the City invests in multiple forms of cybersecurity and operational safeguards. In November 2016, the City adopted a City-wide Cyber Security

Policy (the "**City Cyber Policy**") to support, maintain, and secure critical infrastructure and data systems. The objectives of the City Cyber Policy include the protection of critical infrastructure and information, manage risk, improve cyber security event detection and remediation, and facilitate cyber awareness across all City departments. The City's Department of Technology has established a cybersecurity team to work across all City departments, including the SFPUC, to implement the City Cyber Policy. The City Cyber Policy is reviewed periodically.

The City has also appointed a City Chief Information Security Officer (the "**CCISO**"), who is directly responsible for understanding the business and related cybersecurity needs of the City's 54 departments, including the SFPUC. The CCISO is responsible for identifying, evaluating, responding, and reporting on information security risks in a manner that meets compliance and regulatory requirements, and aligns with and supports the risk posture of the City. Mayor Breed addressed this issue on June 4, 2021 in Executive Directive 21-02, Ensuring Strong and Organized City Defense Against Cybersecurity Attacks ("**Executive Directive 21-02**"), which sets forth requirements for City departments to strengthen and improve the City's cyber functions and programs.

SFPUC Measures. The SFPUC also relies on a large and complex technology environment to conduct its operations. Although the SFPUC maintains its own business and control networks that are separate from the City's network, the SFPUC faces similar cybersecurity threats as the City, including hacking, viruses, malware and other attacks on its computing and other digital networks and systems. To mitigate the risk of and damage from cybersecurity incidences or cyberattacks, the SFPUC abides by the City Cyber Policy and also maintains its own cybersecurity program (the "**SFPUC Cybersecurity Program**"). The SFPUC Cybersecurity Program is based on National Institute of Standards and Technology cybersecurity guidance and employs industry standard Center for Internet Security critical security controls. In addition, control networks for the Water Enterprise and the Wastewater Enterprise adhere to the American Water Works Association Cyber Security guidance and the control networks for the Power Enterprise adhere to the North American Electric Reliability Corporation critical infrastructure protection controls. The SFPUC Cybersecurity Program includes industry standard cybersecurity solutions, and the SFPUC's technologies are continuously tested as part of an internal vulnerability program. The SFPUC's technical controls are prescriptive for hardening servers, network devices and databases, and for addressing system administrator controls, mobile device management, incident response, security patching, antivirus, email, passwords, remote access, secure asset disposal, end user controls, and timely removal of access to systems and facilities for staff that leave employment at the SFPUC. In addition to the SFPUC's controls and in alignment with Executive Directive 21-02, the SFPUC has deployed the city-wide-real-time threat monitoring and alerting solution. The SFPUC Cybersecurity Program is periodically reviewed for effectiveness by independent consultants, most recently in June 2022. In addition, pursuant to the SFPUC's policies, the City Services Auditor and independent cybersecurity auditors performed extensive penetration and vulnerability testing on the SFPUC's business and control networks.

The SFPUC has also appointed a Chief Information Security Officer (the "**CISO**"). In addition to working with the CCISO on cybersecurity policy development and solution sharing, the CISO is responsible for annual updates to the SFPUC's policies, is charged with identifying and monitoring threats which are typically addressed by the SFPUC's information technology services team, educating staff concerning vulnerabilities and constantly improving the SFPUC Cybersecurity Program.

While the SFPUC Cybersecurity Program is periodically reviewed, no assurances can be given by the SFPUC that such measures will ensure against other cybersecurity threats and attacks. Cybersecurity breaches could damage the SFPUC's information security systems and cause material disruption to the SFPUC's operations and the provision of SFPUC services. The costs of remedying any such damage or protecting against future attacks could be substantial. Further, cybersecurity breaches could expose the SFPUC to material litigation and other legal risks, which could cause the SFPUC to incur material costs related to such legal claims or proceedings. The SFPUC currently purchases liability insurance covering cyber-losses and requires its technology vendors to purchase technology errors and omissions insurance coverage. See "FINANCIAL OPERATIONS – Risk Management and Insurance."

Construction Related Risks

Construction projects for the Power Enterprise are subject to ordinary construction risks and delays applicable to projects of their kind, including but not limited to (i) inclement weather affecting contractor performance and timeliness of completion, which could affect the costs and availability of, or delivery schedule for, equipment, components, materials, labor or subcontractors; (ii) contractor claims or nonperformance; (iii) failure of contractors to execute within contract price; (iv) work stoppages or slowdowns; (v) failure of contractors to meet schedule terms; (vi) errors or omissions in contract documents requiring change orders; (vii) the occurrence of a major seismic event; or (viii) unanticipated project site conditions, including the discovery of hazardous materials on the site or other issues regarding compliance with applicable environmental standards, and other natural hazards or seismic events encountered during construction. Increased construction costs or delays could impact the Power Enterprise's financial condition in general and the implementation of its capital programs in particular. Construction bids may also be higher than anticipated for budgeting purposes.

Commercial Paper Note Credit Facilities

Commercial Paper Notes. The bank credit facilities supporting the Commercial Paper Notes are subject to early termination upon the occurrence of certain events, including the failure of the SFPUC to make certain payments, the occurrence of certain bankruptcy or insolvency-related events, the reduction below specified levels or the withdrawal or suspension of ratings on certain obligations of the SFPUC payable from Net Revenues or certain other specified events of default. Upon the occurrence of such termination, one or more of the following would likely occur: (a) the SFPUC would be prohibited from issuing additional notes supported by such credit facilities; (b) any outstanding reimbursement obligation of the SFPUC to the bank providing such facility for draws made for the payment of principal of or interest on Commercial Paper Notes could bear interest at rates higher than the rates borne by the Commercial Paper Notes; and (c) any such outstanding reimbursement obligation of the SFPUC could be accelerated and become immediately due and payable. The Commercial Paper Notes and any reimbursement obligations are payable from Net Revenues on a basis subordinate to the Bonds. See "OBLIGATIONS PAYABLE FROM REVENUES – Subordinate Obligations."

Limitations on Rate-Setting

The generation of Revenues sufficient to satisfy the requirements of the Indenture and to pay the principal of and interest on the 2023A Bonds will require the SFPUC to raise the rates payable by its customers. The increase or maintenance of rates is subject to various substantive and procedural requirements and limitations. See "FINANCIAL OPERATIONS – Rate-Setting Process; Rates."

Raker Act Requirements

The Raker Act, enacted in 1913, granted the City the right to construct the Hetch Hetchy Project, including O'Shaughnessy Dam at Hetch Hetchy Valley in Yosemite National Park and related infrastructure, and to operate the dam and reservoirs to generate electricity and to supply water to San Francisco. The Raker Act further grants the City the right to sell electricity for beneficial use, first to meet San Francisco municipal needs, then the Districts' municipal and agricultural pumping needs, and finally for commercial purposes, provided that in each case such electricity may not be sold to a private corporation or individual for resale. See "THE HETCH HETCHY PROJECT – History." Wholesale electricity deliveries to the Districts are on an "as available" basis and are required by the Raker Act only after satisfying the City's own municipal needs. Any additional excess electricity supplies are sold to certain end-user retail customers and then on the wholesale market to public entities consistent with the requirements of the Raker Act. The Raker Act does not restrict the City's purchase, use and sale of non-Hetch Hetchy Project electricity. See "THE POWER ENTERPRISE – Wholesale Electricity Sales."

Customer Concentration

The Power Enterprise's customer base consists of municipal customers, retail customers and long-term wholesale customers, with excess generation sold on the wholesale short-term markets primarily during the run-off spring season. Since Fiscal Year 2017-18, there have been no sales under long-term wholesale agreements with the Districts. See "THE POWER ENTERPRISE – Wholesale Electricity Sales."

On average, approximately 76.7% of charges for services revenues were from municipal sales from Fiscal Years 2017-18 through 2021-22. While those revenues have historically remained relatively constant, in recent years, the Commission has approved rate increases to municipal customers. Retail sales have grown in recent years due to customer growth in redevelopment areas and customers transferring to Hetch Hetchy power service from other providers. See "FINANCIAL OPERATIONS – Power Sales Revenues; Other Revenues" and "– Limitations on Rate-Setting."

As the Power Enterprise's retail customers are concentrated primarily in and around San Francisco, changes in the financial condition of, or the health of the economy in, San Francisco and, to a certain extent, the greater Bay Area, may have an amplified impact on the finances of the Power Enterprise. As many customers of the Power Enterprise are municipal and other governmental entities, factors impacting the financial condition of such entities may similarly have significant impact on the finances of the Power Enterprise. See "THE POWER ENTERPRISE – Recent Factors Impacting Power Revenues."

Increased Operation and Maintenance Expenses

There can be no assurance that the Operation and Maintenance Expenses of the SFPUC, such as wages and salaries, pension and other benefits, purchased power costs, and purchased transmission and distribution service costs, will not increase, perhaps substantially, due to price inflation, volatile investment or commodities markets, economic disruption or any other factors. See "FINANCIAL OPERATIONS – Operation and Maintenance Expenses" and "THE HETCH HETCHY PROJECT –Variability of Hydroelectric Generation."

Uncertainties of Forecasting Future Load Growth

The SFPUC's ability to serve a growing electric load may require capital investment in, and construction of, distribution facilities in advance of customers using such facilities. In addition, increased loads may require increased power purchases and may increase overall operating expenses. See "THE HETCH HETCHY PROJECT – Variability of Hydroelectric Generation" and "– Changes in Energy Prices." In the case of redevelopment projects, most, but not all of the costs of this investment is born by the developer. The pace of the development of such projects can be effected by overall economic conditions outside the control of the SFPUC, making financial and capital planning challenging. Similarly, the pace of customer response to State and local mandates and/or incentives, like electric vehicle adoption, conversion from gas to electric home heating and cooking, and building electrification is also difficult to predict, making financial and capital planning challenging. To address these challenges, the SFPUC applies standard industry practices in forecasting and sensitivity analysis, monitoring project progress, and maintaining ongoing communication with large project construction plans.

Changes in Energy Prices

Energy prices have at times been subject to volatile change for numerous reasons, including market forces beyond the control of the SFPUC. In particular, recent years in California and western states have seen significant increases in overall prices and seasonal variability in power markets due to supply chain disruptions, the war in Ukraine, and extreme weather events. See "DEVELOPMENTS IN THE ELECTRICITY MARKETS AND REGULATION." Depending on the timing during the year, higher wholesale energy market prices may increase operating costs of the Power Enterprise and reduce Net Revenues or increase wholesale power sales revenue and increase Net Revenues.

The State's electricity deregulation instituted pricing mechanisms that establish market clearing prices for all electricity not purchased under forward contracts. Electricity prices are set through this auction mechanism designed to account for supply, demand and congestion. When generation supply exceeds demand, electricity prices move lower. Typically, electricity prices are lower in the spring when hydroelectric generation is abundant and demand moderate. Electricity prices tend to be higher in the late summer and fall when regional and State-wide generating resources are more limited and demand is highest. In an average year, the Power Enterprise has excess generation to sell in the first half of the year and generally purchases wholesale electricity during the second half of the year to meet its load obligations. The Power Enterprise accounts for the seasonal differential in electricity price in its budget request for annual electricity purchases and reflects such costs in the rates it charges customers.

The SFPUC generally sets electric rates for enterprise customers at a level competitive with the adopted PG&E rates for each customer class; however, there is currently no explicit linkage between the SFPUC's rates and PG&E's rates. See "THE POWER ENTERPRISE – Power Service in San Francisco – *Pacific Gas & Electric Company*." PG&E is regulated by the CPUC for its retail services and by the FERC for its wholesale service. PG&E's rates for retail service to customers in California are established by the CPUC after public review to determine they are "just and reasonable."

See also "– Limitations on Rate-Setting" and "DEVELOPMENTS IN THE ELECTRICITY MARKETS AND REGULATION."

Changes in Transmission and Distribution Service Costs

The SFPUC pays for transmission service to the CAISO and distribution service to PG&E. The rates and terms of these services are regulated by the FERC, and are subject to change. The SFPUC monitors and participates in the proceedings conducted by FERC to review and approve changes to the rates and terms of service to protect its interests in reasonable rates and terms. These rates and terms effect the SFPUC cost of service and, in some cases, the availability of service from SFPUC to its customers. See also "– Risks Related to Power Enterprise Operations and Facilities – *Interconnection Delays and Costs*."

Uncertainties of the Electric Utility Industry

The operations of the Power Enterprise and its financial condition could be adversely affected by developments in the electricity markets and related regulation. See "DEVELOPMENTS IN THE ELECTRICITY MARKETS AND REGULATION."

Economic, Political, Social and Environmental Conditions

Changes in economic, political, social, or environmental conditions on a local, State, federal, and/or international level may adversely affect investment risk generally. Such conditional changes may include (but are not limited to) disruptions in business activity, consumer prices, or financial markets, unemployment rates, availability of skilled labor, technological advancements, shortages or surpluses in natural resources or energy supplies, changes in law, social unrest, fluctuations in the crime rate, political conflict, acts of war or terrorism, environmental damage, and natural disasters.

Pandemics; COVID-19 Pandemic

A pandemic, epidemic or outbreak of an infectious disease can have significant adverse health and financial impacts on global and local economies. For example, the COVID-19 pandemic significantly impacted the City and resulted in prolonged stay-at-home orders that impacted each of the SFPUC's enterprises, including the Power Enterprise. In addition to certain direct impacts on the operations and finances of the Power Enterprise, COVID-19 has had significant and varied impacts on general economic activity at the local, national and global levels, including supply chain and labor market disruptions. Such disruptions have, among other effects, resulted in increases in materials, labor, transportation and other costs across a wide number of sectors, as well as delays in delivery of projects and equipment. The Power Enterprise has experienced, and may in the future experience, increases in certain costs and delays in the delivery of equipment, such as transformers, as a result of COVID-19's disruption of supply chains. Additionally, such disruptions may result in schedule delays for the Power Enterprise's capital projects or increased costs for such projects.

Constitutional, Statutory and Charter Limitations

The SFPUC is subject to limitations imposed by the Charter and by the State Constitution and statutes. Such limitations could adversely affect the financial condition of the Power Enterprise. See "CONSTITUTIONAL, STATUTORY AND CHARTER LIMITATIONS."

Initiative, Referendum, Charter Amendments and Future Legislation and Regulations

Under the State Constitution, the voters of California have the ability to initiate legislation and require a public vote on legislation passed by the California Legislature through the powers of initiative and referendum, respectively. Under the Charter, the voters of San Francisco can restrict or revise the powers of the SFPUC through the approval of a Charter amendment. The SFPUC is unable to predict whether any such initiatives might be submitted to or approved by the voters, the nature of such initiatives, or their potential impact on the SFPUC or the Power Enterprise. See "CONSTITUTIONAL, STATUTORY AND CHARTER LIMITATIONS." See also "– Risks Related to Power Enterprise Operations and Facilities – *Proposals to Restore Hetch Hetchy Valley*."

In addition, the SFPUC and its operations are subject to various laws, rules and regulations adopted by the local, State and federal governments and their agencies. The SFPUC is unable to predict the adoption or amendment of any such laws, rules or regulations, or their effect on the operations or financial condition of the Power Enterprise.

Bankruptcy of the City

The SFPUC, being an enterprise department of the City, likely cannot itself file for bankruptcy. While an involuntary bankruptcy petition cannot be filed against the City, the City is only authorized to file for bankruptcy under certain circumstances. Should the City file for bankruptcy, there could be adverse effects on the holders of the 2023A Bonds.

To the extent that the Revenues are "special revenues" under the United States Bankruptcy Code (the "**Bankruptcy Code**"), then Revenues collected after the date of the bankruptcy filing should be subject to the lien of the Indenture. If any or all of the Revenues are determined not to be "special revenues," then any such amounts collected after the commencement of the bankruptcy case will likely not be subject to the lien of the Indenture. "Special revenues" are defined to include revenues derived from the ownership or operation of projects or systems that are primarily used to provide utility services. No assurance can be given that a court would hold that any or all Revenues are special revenues. In a case arising from the insolvency proceedings of Puerto Rico, the United States Court of Appeals for the First Circuit concluded that while a debtor has the right to voluntarily apply special revenues to the payment of debt service during the pendency of a bankruptcy case, the debtor is not obligated to do so, even though the special revenues are subject to the lien of the bond documents. The holders of the 2023A Bonds may not be able to assert a claim against any property of the City other than the Net Revenues, and if any or all of the Revenues are no longer subject to the lien of the Indenture, then there may be limited, if any, funds from which the holders of the 2023A Bonds are entitled to be paid.

The Bankruptcy Code provides that "special revenues" can be applied to necessary operating expenses of the project or system, before they are applied to other obligations. This rule applies regardless of the provisions of the transaction documents. It is not clear precisely which expenses would constitute necessary operating expenses, and any definition in the transaction documents may not be applicable.

If the City is in bankruptcy, the parties (including the Trustee and the holders of the 2023A Bonds) may be prohibited from taking any action to collect any amount from the City or to enforce any obligation of the City, unless the permission of the bankruptcy court is obtained. These restrictions may also prevent the Trustee from making payments to the holders of the 2023A Bonds from funds in the Trustee's possession. The rate covenants (see "SECURITY FOR THE BONDS – Rate Covenant; Rates and Charges") may not be enforceable in bankruptcy by the Trustee or the holders of the 2023A Bonds.

Revenues are deposited with and held by the Treasurer and may be commingled with other City funds. See "SECURITY FOR THE BONDS – Flow of Funds." If the City goes into bankruptcy, the City may not be required to turn over to the Trustee any Revenues that are in its possession at the time of the bankruptcy filing. In addition, if the City has possession of Revenues (whether collected before or after commencement of the bankruptcy) and if the City does not voluntarily turn over such Revenues to the Trustee, it is not entirely clear what procedures the Trustee and the holders of the 2023A Bonds would have to follow to attempt to obtain possession of such Revenues, how much time it would take for such procedures to be completed, or whether such procedures would ultimately be successful. The United States Court of Appeals for the First Circuit, in another case involving the insolvency proceedings of Puerto Rico, concluded that a bankruptcy court does not have the power to order a debtor to comply with state law.

The City may be able to borrow additional money that is secured by a lien on any of its property (including the Revenues), which lien could have priority over the lien of the Indenture, or to cause some of the Revenues to be released to it, free and clear of the lien of the Indenture, in each case as long as the bankruptcy court determines that the rights of the Trustee and the holders of the 2023A Bonds will be adequately protected.

If the City is in bankruptcy it may be able, without the consent and over the objection of the Trustee and the holders of the 2023A Bonds, to alter the priority, interest rate, principal amount, payment terms, collateral, maturity dates, payment sources, covenants (including tax-related covenants), and other terms or provisions of the Indenture and the 2023A Bonds, as long as the bankruptcy court determines that the alterations are fair and equitable.

There may be delays in payments on the 2023A Bonds while the court considers any of these issues. There may be other possible effects of a bankruptcy of the City that could result in delays or reductions in payments on the 2023A Bonds, or result in losses to the holders of the 2023A Bonds. Regardless of any specific adverse determinations in a City bankruptcy proceeding, the fact of a City bankruptcy proceeding could have an adverse effect on the liquidity and value of the 2023A Bonds.

The SFPUC invests Revenues in the City's Pooled Investment Fund. See "FINANCIAL OPERATIONS – Investment of SFPUC Funds." In the event of a bankruptcy of the City, there may be delays or reductions in payments on the 2023A Bonds.

Limitations on Remedies

The remedies available to the owners of the Bonds upon the occurrence of an event of default under the Indenture in many respects depend upon judicial actions which are themselves often subject to discretion and delay and could prove both expensive and time consuming to obtain. In addition to the limitations on remedies contained in the Indenture, the rights and obligations under the Bonds and the Indenture may be subject to bankruptcy, insolvency, reorganization, arrangement, fraudulent conveyance, moratorium and other laws relating to or affecting creditors' rights, to the application of equitable principles, to the exercise of judicial discretion in appropriate cases and to limitations on legal remedies against charter cities and counties in California. The opinion to be delivered by Bond Counsel, concurrently with the issuance of the 2023A Bonds, that the 2023A Bonds constitute valid and binding limited obligations of the SFPUC and the Indenture constitutes a valid and binding obligation of the SFPUC will also be subject to such limitations and the various other legal opinions to be delivered concurrently with the issuance of the 2023A Bonds will be similarly qualified. See "APPENDIX C – PROPOSED FORM OF OPINION OF BOND COUNSEL."

If the SFPUC fails to comply with its covenants under the Indenture or to pay principal of or interest on the 2023A Bonds, there can be no assurance that the available legal remedies will be adequate to protect the interests of the holders of the 2023A Bonds.

Loss of Tax Exemption/Risk of Tax Audit of Municipal Issuers

As discussed under "TAX MATTERS," interest on the 2023A Bonds could fail to be excluded from the gross income of the owners thereof for purposes of federal income taxation retroactive to the date of the issuance of the 2023A Bonds as a result of future acts or omissions of the SFPUC in violation of its covenants to comply with requirements of the Code, as amended. Should such an event of taxability occur, the 2023A Bonds are not subject to redemption or any increase in interest rate and could remain outstanding until maturity.

The Internal Revenue Service (the "**IRS**") has an expanded program for the auditing of tax-exempt securities issues, including both random and targeted audits. It is possible that the 2023A Bonds could be selected for audit by the IRS. It is also possible that the market value of the 2023A Bonds might be affected as a result of such an audit of the 2023A Bonds (or by an audit of similar securities).

Change in Tax Law

As discussed under "TAX MATTERS," current and future legislative proposals, if enacted into law, clarification of the Code or court decisions may cause interest on the 2023A Bonds to be subject, directly or indirectly, in whole or in part, to federal income taxation or to be subject to State income taxation, or otherwise prevent beneficial owners from realizing the full current benefit of the tax status of such interest.

Failure to Maintain Credit Ratings

Certain rating agencies have assigned ratings to the 2023A Bonds. The ratings issued reflect only the views of such rating agencies. Any explanation of the significance of these ratings should be obtained from the respective rating agencies. See "RATINGS." There is no assurance current ratings will continue for any given period or that such ratings will not be revised downward or withdrawn entirely by the rating agencies if, in the respective judgment of such rating agencies, circumstances so warrant. Any such downward revision or withdrawal of such ratings could be expected to have an adverse effect on the market price or the marketing of the 2023A Bonds. The SFPUC undertakes no obligation to maintain its current credit ratings on the 2023A Bonds or to oppose any such downward revision, suspension or withdrawal.

Secondary Market

There can be no guarantee that there will be a secondary market for the 2023A Bonds or, if a secondary market exists, that the 2023A Bonds can be sold for any particular price. Occasionally, because of general market conditions or because of adverse developments or economic prospects connected with a particular issue, secondary trading practices in connection with a particular issue are suspended or terminated. Additionally, prices of issues for which a market is being made will depend upon then prevailing circumstances. Such prices could be substantially different from the original purchase price.

Uncertainties of Projections, Forecasts and Assumptions

Certain information contained in this Official Statement is based upon assumptions and projections. Projections and assumptions are inherently subject to significant uncertainties. Inevitably, some assumptions will not be realized and unanticipated events and circumstances may occur and actual results are likely to differ, perhaps materially, from those projected. Accordingly, such projections are not necessarily indicative of future performance, and the SFPUC assumes no responsibility for the accuracy of such projections. See "FORWARD-LOOKING STATEMENTS."

Other Risks

The discussion in this section, "CERTAIN RISK FACTORS," is not meant to be a comprehensive or definitive list of the risks associated with an investment in the 2023A Bonds. There may be other risks inherent in ownership of the 2023A Bonds in addition to those described in this section. Investors are advised to read the entire Official Statement in order to obtain information necessary to make an investment in the 2023A Bonds.

DEVELOPMENTS IN THE ELECTRICITY MARKETS AND REGULATION

Structure of the Energy Market Today

California's electric system is part of the Western grid, one of three interconnected electric systems that cover the continental United States (the others being the Eastern grid and the Texas Interconnection). In addition to all of California, the Western grid consists of all or part of 13 other Western states, two Canadian provinces, and Baja California, Mexico. The ability of electricity to flow across this grid, subject to transmission availability, creates a regional market for electricity.

Within the Western grid, there are 38 balancing authorities. A balancing authority is an entity responsible for operating a portion of the grid (called a transmission control area or balancing authority area). The balancing authority matches electric generation with load and maintains the electric frequency of the grid.

The CAISO is the largest of the balancing authorities in the western interconnection, handling an estimated 35% of the electric load in the West. The CAISO manages the flow of electricity across the high-voltage, long-distance electric transmission lines that make up 80% of California's and a small part of Nevada's electric grid. The CAISO began operations in 1998 as a result of FERC orders requiring transmission owners to provide nondiscriminatory access to all transmission customers and California's restructuring of the electric industry with the adoption of AB 1890 in 1996. AB 1890 encouraged California's three largest investor-owned electric utilities to turn over operational control of their transmission systems to the CAISO. The goal of AB 1890 was to make California's electric transmission system available on an open and non-discriminatory basis to all generators and electric consumers. The CAISO is a non-profit public benefit corporation overseen by a five-member board appointed by the Governor of the State and confirmed by the State Senate. It is regulated by the FERC.

The CAISO also operates California's wholesale electricity market, using state-of-the-art technology to match demand with the lowest cost energy available at any given time. The CAISO runs an hourly day-ahead market and runs real-time markets every fifteen minutes and every five minutes, facilitating over 28,000 market transactions a day. Although most of California's electric needs are met through longer-term business relationships (such as resource ownership or long-term contracts), the CAISO day-ahead and real-time energy markets provide indicators of the current market price of electricity. The market clearing prices reflect limitations in the transmission system; if an expensive generator must operate because there is inadequate transmission capacity to bring cheaper generation into a constrained area, then all the generators in the constrained area are paid the price bid by the most expensive generator that needs to operate within the constrained area.

The CAISO began financially binding operation of the Western Energy Imbalance Market (the "**WEIM**") on November 1, 2014. In the beginning, resources were only optimized across the CAISO and PacifiCorp balancing authority areas. Since that time, NV Energy, Arizona Public Service, Puget Sound Energy, Portland General Electric, Idaho Power, Powerex, Balancing Authority of Northern California, Salt River Project, Seattle City Light, Public Service Company of New Mexico, Northwestern Energy, Los Angeles Department of Water and Power, and TID have become participants in the WEIM. The footprint now includes portions of Arizona, California, Idaho, Nevada, Oregon, Utah, Washington, and Wyoming, even extending to the Canadian border. The WEIM allows load-serving entities located outside of the CAISO to access the CAISO's real-time energy market which leads to a better balance of supply and demand. The CAISO board of governors and the five-member WEIM governing board jointly govern the real-time market rules affecting the WEIM.

The CAISO also ensures the reliability of its electric system by imposing resource adequacy ("**RA**") standards upon all load-serving entities within the CAISO. The RA requirements obligate each load-serving entity to procure in advance a specified amount of electricity capacity that must be made available to the CAISO to schedule and dispatch as needed to meet electricity demand. The CAISO currently has three RA obligations that the SFPUC must meet:

- A system-wide obligation to provide capacity sufficient to meet the SFPUC's forecasted peak demand plus a sufficient reserve margin (currently set at 15% of peak demand) ("**System RA**");

- A flexible capacity obligation to ensure that a pre-determined portion of the capacity used to meet the system-wide obligation is capable of being dispatched and ramping up and down over the course of the day to meet fluctuations between supply and demand ("**Flexible RA**"); and

- A local capacity requirement to ensure that the CAISO has sufficient capacity in certain sub-regions to ensure reliable service in the event of local reliability issues ("**Local RA**").

The CAISO also engages in long-term transmission planning, identifying upgrades or expansions that are needed to meet reliability requirements, providing economic benefits, connecting new generation to the grid and/or achieving public policy goals (such as the development of new renewable generation).

The Power Enterprise's Relationship to the CAISO

Almost all of the Power Enterprise's electric loads are scheduled through the CAISO transmission system. The Power Enterprise uses the CAISO's transmission system to deliver electricity to the Power Enterprise load, as well as to buy and sell surplus electricity. The SFPUC's high-voltage electric transmission lines are not under the operational control of the CAISO, so the SFPUC and the CAISO have an agreement that coordinates the operation of the SFPUC's transmission lines with the CAISO system. Some of the SFPUC's transmission lines are also connected to two other balancing authorities. These are TID, which operates as its own balancing authority area, and the Balancing Authority of Northern California, which includes MID.

As it relates to NERC, the CAISO also serves as the SFPUC's reliability coordinator, balancing authority and planning coordinator.

The Power Enterprise receives wholesale distribution service from PG&E under a FERC-approved tariff and receives transmission service over PG&E's facilities under PG&E's and the CAISO's open access transmission tariffs. See "THE POWER ENTERPRISE – Transmission and Distribution."

Resource Adequacy Requirements

The RA compliance program is intended to ensure there is sufficient electric generating capacity available to the CAISO to meet demand at all times. The RA program requires Load Serving Entities ("**LSEs**"), such as the Power Enterprise to secure sufficient RA capacity resources to meet forecasted monthly peak demand plus a planning reserve margin to account for unexpected outages, higher than anticipated demand, and other contingencies.

Entities serving electric load in CAISO territory must comply with the RA compliance program requirements. However, the CPUC and other Local Regulatory Authorities ("**LRAs**") have the authority to regulate their jurisdictional LSEs with their own RA requirements, as long as they meet CAISO's minimum standards.

There are currently three RA products that the Power Enterprise must procure to meet the RA compliance program requirements, as further described under "– Structure of the Energy Market Today": (1) System RA, ensuring sufficient capacity at the CAISO system-wide level; (2) Local RA, ensuring sufficient capacity within smaller transmission-constrained geographic areas throughout PG&E's planning area in northern and central California; and (3) Flexible RA, ensuring sufficient ramping capacity to address short periods of high demand or quickly dropping demand. The Hetch Hetchy Project provides sufficient capacity to meet its own System RA; however, it is not within any of the CAISO's transmission-constrained geographic areas throughout PG&E's planning area, and therefore cannot be used to meet Local RA obligations.

Extended Day-Ahead Market

The CAISO is investigating extending the operation of its day-ahead market to the entire WEIM footprint, with the expectation that doing so would allow for a more efficient unit commitment, reductions in required reserves and more efficient utilization of the transmission system. Before it could do so, the CAISO would need to address important issues such as transmission access charge cost allocation, congestion revenue rights allocation, minimum

RA requirements, participation commitment requirements, and governance issues. The SFPUC is participating in the ongoing stakeholder process to advocate for its interests and to anticipate potential impacts of proposed rules changes.

On-Going Market Changes

The CAISO market is continually evolving to reflect changes in business needs, technological changes, and federal law and regulation.

Federal Law and Regulation

Federal Energy Regulatory Commission

The Federal Power Act, as amended, gives FERC the authority to regulate the interstate transmission of electric energy and the sale, at wholesale, of electric energy. FERC is vested with “jurisdiction over all facilities for such transmission or sale” as well as the requirement to ensure that the rates and charges for these services as well as “any rule, regulation, practice, or contract affecting such rate, charge or classification,” are not “unjust, unreasonable, unduly discriminatory or preferential.”

Under the Federal Power Act, states retain authority over “any other sale of electric energy” and facilities used for “generation of electric energy,” “local distribution” or “transmission of electric energy in intrastate commerce.” POUs like the SFPUC are also generally exempt from FERC regulation, except for regulations pertaining to electric system reliability. POUs are affected by FERC regulation, however, to the extent they rely on FERC-regulated transmission services or energy purchases to meet their needs. Additionally, FERC has adopted a reciprocity requirement, under FERC Order 888 (as described below), that a POU that benefits from the open-access requirements of a FERC-regulated transmission provider must offer comparable open-access. To date none of the Power Facilities or related transmission lines have been subject to a comparable open-access request. In addition, certain FERC regulatory requirements, such as the licensing of dams, are applicable to POUs, but not to the Hetch Hetchy Project as a result of specific exemptions for such facilities in the Federal Power Act.

FERC is the primary regulatory agency overseeing the rates, rules and regulations that the CAISO has established for its operation. As noted above, the Power Enterprise relies on the CAISO’s transmission system to deliver energy to its load, and is subject to the CAISO’s resource adequacy requirements which are also FERC-regulated. FERC is also responsible for regulation of the wholesale energy market. This regulation affects the price that the Power Enterprise may pay for energy purchases from FERC-regulated entities, as well as non-Raker Act energy sales. The Power Enterprise’s wholesale sales of excess energy to other public entities (which includes all sales of electric energy subject to the Raker Act) are not subject to FERC jurisdiction, but the price for such sales is generally influenced by the broader Western energy market which is largely under FERC jurisdiction. Power Enterprise wholesale sales to other public entities may also involve the use of FERC-regulated transmission services to deliver the electricity.

When Congress initially enacted the Federal Power Act in 1935, electric utilities were mostly vertically integrated firms that constructed and operated their own generation, transmission and distribution facilities. The firms acted as separate, local monopolies, and consumers paid a single “bundled” rate for delivered electricity. Sixty years later, the electric industry had experienced fundamental changes: electric systems had become increasingly interconnected, long-distance transmission had become increasingly economical, and smaller, lower-cost electric generating plants had begun to emerge as competitors to the vertically integrated utilities.

FERC responded to these changes and market conditions by adopting reforms to the electric industry that were designed to promote competition and create a competitive wholesale market for electricity. In FERC Order 888, FERC required each transmission provider subject to FERC regulation to “functional[ly] unbundle” its wholesale generation and transmission services and file an open-access transmission tariff that would allow non-discriminatory access to each utility’s transmission system (bracketed language added). The goal of this change was to allow customers to have the benefits of competitively priced generation. To promote development of competitive markets, FERC encouraged the formation of regional transmission organizations and independent system operators such as the CAISO to coordinate the use, operation, and planning of a region's transmission system.

One of the results of FERC Order 888 is a competitive Western-wide wholesale energy market. FERC has adopted a pro-competition policy of letting prices in these markets be set by market forces, subject to FERC retaining authority to address instances of market abuse and manipulation.

FERC has also moved to make the market for transmission services more efficient and competitive. FERC Order 890 requires each FERC-regulated transmission provider to establish an open, transparent and coordinated transmission planning process. The CAISO utilizes a yearly transmission planning process to meet its requirements under FERC Order 890. FERC Order 1000 goes a step further and now requires inter-regional transmission planning, the development of methodologies to allocate the costs of inter-regional transmission facilities as well as allowing for competition among transmission developers to build new projects identified as needed as a result of the transmission planning process.

North American Electric Reliability Corporation

The Energy Policy Act of 2005 required FERC to certify an Electric Reliability Organization ("**ERO**") to develop mandatory and enforceable reliability standards ("**Reliability Standards**"), subject to FERC review and approval. On July 20, 2006, FERC certified NERC as an ERO. The reliability standards developed by NERC and adopted by FERC apply to entities included on NERC's Compliance Registry of users, owners and operators of the Bulk Power System that are material to the reliable operation of the Bulk Power System, as more specifically set forth in each Reliability Standard. Many Reliability Standards have since been approved by FERC.

FERC has adopted mandatory electric reliability standards developed by the North American Electric Reliability Corporation ("**NERC**") and enforced in the western region of the United States by the Western Electric Coordinating Council ("**WECC**"). These standards require all entities that are a part of the bulk power system to demonstrate their ability to ensure reliability for all operations. The SFPUC owns both transmission and generation assets that are part of the bulk electric system and therefore are required to register and demonstrate compliance (or plans to mitigate non-compliance) in several operational areas. The SFPUC is subject to over 1,000 requirements.

NERC and its Regional Entities ("**Regional Entities**") may enforce the Reliability Standards, subject to FERC oversight or FERC may independently enforce the Reliability Standards. The WECC is the Regional Entity for the western region. Potential monetary sanctions include fines of up to $1.31 million per violation per day. FERC has provided NERC and the Regional Entities with the discretion necessary to assess penalties for such violations within an appropriate range, pursuant to NERC's FERC-approved Sanction Guidelines. In exercising its independent enforcement authority, FERC applies its own September 17, 2010, Revised Policy Statement on Penalty Guidelines. FERC clarified that it would not apply its Revised Policy Statement on Penalty Guidelines in its review of penalties assessed by NERC under the NERC Sanction Guidelines.

The SFPUC's compliance program is audited every three years by WECC. In June 2023, WECC completed its 2023 Compliance Audit covering the period May 2020 through February 2023. The audit concluded with "No Findings" for all requirements within audit scope, and included two positive observations on the SFPUC's compliance program.

FERC Hydroelectric Licensing

Under the Federal Power Act, FERC is also responsible for the licensing of hydroelectric plants within the United States. The Hetch Hetchy Project, however, predates FERC's authority and is exempt from FERC regulation pursuant to specific "grandfathering" provisions in the Federal Power Act. The New Don Pedro Project, owned and operated by the Districts, is subject to FERC regulation and is currently undergoing re-licensing. See "THE HETCH HETCHY PROJECT – FERC Proceeding Regarding Relicensing of the New Don Pedro Project."

California State Law and Regulation

State Constitution

Article XI, Section 9(a) of the State Constitution allows municipal corporations, such as the City, to "establish, purchase, and operate public works to furnish its inhabitants with light, water, power, heat, transportation, or means of communication." As a result, the SFPUC has significant discretion to establish its own rules and procedures for operating its electric utility subject to those areas where either the State has asserted jurisdiction or there is an issue of federal pre-emption.

The following is a list of California legislation that affects the Power Enterprise's electric operations and the SFPUC's compliance with these requirements.

Assembly Bill 32; California Air Resources Board Scoping Plan; Cap and Trade

State Assembly Bill 32 (2006) ("**AB 32**"), known as the Global Warming Solutions Act of 2006, required the California Air Resources Board ("**CARB**") to adopt policies and regulations to reduce GHG emissions to 1990 levels by 2020. On December 11, 2008, CARB adopted a "scoping plan" identifying the market structures, prescriptive regulations, fees and voluntary measures that needed to be developed and implemented by CARB and other State agencies to achieve this goal. Among the measures identified in the scoping plan that could potentially affect the SFPUC were proposals to increase energy efficiency, promote renewable energy and distributed generation, and to increase electrification of motor vehicles.

The scoping plan included a cap-and-trade system covering approximately 85% of all GHG emissions in California that was approved by CARB on December 16, 2010 and became enforceable starting on January 1, 2013. In 2014 the program was expanded to include the province of Quebec, Canada.

For electric utilities, the cap-and-trade compliance obligation is placed on the "first deliverers" of electric energy. First deliverers include those who generate electric energy in state or those who first import energy into California from out-of-state. As the Power Enterprise's electric generation resources do not emit CO2 and the Power Enterprise does not purchase electric energy directly from out-of-state, the Power Enterprise has no compliance obligation under the program and is not a covered entity. GHG emissions from the Power Enterprise's operation of the natural gas system at Treasure Island are also below the 25,000 ton CO2 level that would trigger a compliance obligation.

Under the cap-and-trade program, electric distribution utilities ("**EDUs**") such as the SFPUC receive a designated amount of allowances set by regulation. One purpose of these allowances is to compensate EDUs at least partially for the higher prices they may incur for purchasing electric energy that now has a compliance obligation. The EDU must either use the allowances to meet its own compliance obligations or put its allowances up for sale at quarterly auctions run by CARB. These allowances also serve a second purpose of covering for any potential "emissions leakage" from acquiring electricity through the WEIM. CARB directly reduces the allowance allocation to EDUs to reflect their electricity purchases through the WEIM. All remaining allowances provided to EDUs must be used to benefit the utility's ratepayers. Because the SFPUC does not have a compliance obligation under the program, the SFPUC must sell all of its remaining allowances through the auction process and uses the proceeds to benefit ratepayers as required by the cap-and-trade program.

Senate Bill 32; Assembly Bill 398; Assembly Bill 1279; California Air Resources Board Scoping Plan; Cap and Trade

State Senate Bill 32 (2016) ("**SB 32**"), known as the California Global Warming Solutions Act of 2016, requires GHG emissions reductions target of at least 40% below 1990 levels by 2030. State Assembly Bill 398 (2017) ("**AB 398**") codified the continuation of the cap and trade program and required some post 2020 modifications to the program. State Assembly Bill 1279 (2022), known as the California Climate Crisis Act, requires the State to achieve net zero GHG emissions by 2045. As required by AB 32, CARB continues to update its scoping plan at least every five years identifying potential future measures to reduce GHG emissions. In its most recent scoping plan update conducted in 2022, CARB proposed changes to the cap-and-trade program to align the program with the accelerated 2030 targets and the net zero GHG targets by 2045. As part of these changes, more ambitious reductions are anticipated from the electricity sector. CARB has released a notice in February 2023 confirming that changes are expected to the cap-and-trade program and has determined that the CEQA administrative record for the amendments commenced on February 13, 2023, but a formal rulemaking has not yet commenced.

Senate Bill 350; Integrated Resource Plan

State Senate Bill 350 (2015) requires all of California's large POUs, including the Power Enterprise, to submit an Integrated Resources Plan ("**IRP**") that shows how each POU will meet California's environmental and energy policy goals. The IRP is required to be updated once every five years. The current IRP for Hetch Hetchy Power was filed in February 2019 and subsequently approved by the California Energy Commission in June 2019. The current IRP described the Power Enterprise's plans to continue to provide 100% zero-GHG renewable energy to its customers through 2030, comply with RPS program requirements, and provide reliable electric service to meet its customer needs. The SFPUC is currently working on the next IRP, which is due in 2024.

Renewable Portfolio Standard

The California Renewable Energy Resources Act (the "**CRERA**"), effective as of December 10, 2011, established requirements for the procurement of eligible renewable resources ("**Renewable Portfolio Standards**" or "**RPS**") for California's retail sellers of electricity, including local POUs such as the Power Enterprise. Eligible renewable resources include wind, solar, geothermal, biomass, wave/tidal energy and hydroelectric generation that meets certain criteria.

The CRERA generally requires all electric utilities, CCAs and energy service providers to procure 33% of their retail energy needs from renewable energy by 2020. State Senate Bill 350 (2015) set a new RPS target for 2030 of 50% which was further increased to 60% by the enactment of State Senate Bill 100 (2018) ("**SB 100**"). SB 100 also established a policy to achieve 100% of total retail sales from eligible renewable energy resources and zero-carbon resources by December 31, 2045. The CRERA recognized that imposing a 60% RPS obligation upon the Power Enterprise would have resulted in the Power Enterprise having to displace one zero-GHG energy resource (Hetch Hetchy Project hydroelectric energy) with another zero-GHG resource (eligible renewable resources) without any reduction in GHG emissions and significantly increased costs to the SFPUC. As a result, the CRERA established an alternative compliance obligation for the Power Enterprise. Provided that the Power Enterprise receives greater than 67% of its electricity demands from the Hetch Hetchy Project, the SFPUC is only required to procure eligible renewable energy resources for its electric demands unmet by the Hetch Hetchy Project. Since the enactment of CRERA in 2011, the Power Enterprise has met its RPS obligations for every year, historically meeting about 97% of its electric demands from its Hetch Hetchy Project generation, and in most years close to 100%. As a result, the Power Enterprise generally needs to procure only small amounts of eligible renewable energy annually to meet its RPS obligations under the CRERA. Almost all of this need can be met by RPS-eligible generation from the Power Enterprise's Kirkwood Powerhouse generating units. The Power Enterprise has additionally accumulated a significant surplus of renewable energy credits from this generation that can be banked and used for future compliance if needed. This banked renewable energy credits makes it unlikely that the Power Enterprise would need to procure additional RPS-eligible energy from third-parties and if this were needed, the amounts to be acquired would be relatively small and consistent with the Power Enterprise's budget for purchased power.

For POUs, the initial responsibility for enforcing the CRERA's requirements is placed upon the POU. To ensure that the Power Enterprise can meet applicable RPS requirements, the SFPUC adopted an enforcement program on December 13, 2011 (Resolution 11-0202), which directed staff to develop a procurement plan that was also adopted by the Commission (Resolution 12-0217). The procurement plan identifies the Power Enterprise's requirements under the RPS, identifies the exceptions allowed under the RPS that would allow the Power Enterprise to defer or delay meeting the RPS requirements, establishes the process for forecasting and procuring any additional RPS-eligible supplies needed to meet the RPS requirements (including unexpected contingencies).

Resource Adequacy Requirements

Section 9620 of the California Public Utilities Code requires each POU to develop its own resource adequacy requirement and to "prudently plan for and procure resources that are adequate to meet its planning reserve margin and peak demand and operating reserves, sufficient to provide reliable electric service to its customers." This requirement is similar to the RA requirements established by the CAISO. See " – The Power Enterprise's Relationship to the CAISO – *Resource Adequacy Requirements*." FERC has authorized the CAISO to apply its own RA rules to any utility that has not adopted an RA program. To comply with Section 9620 of the California Public Utilities Code, on May 23, 2006, the SFPUC adopted, in its Resolution 06-0087, an Interim Utility Resource Adequacy Plan. The Interim Utility Resource Adequacy Plan established a 15% reserve margin and established forecasting and reporting requirements to meet the California Public Utilities Code's requirements. The Power Enterprise must demonstrate compliance with resource requirements set by the CAISO.

As discussed above, the Hetch Hetchy project complies with the CAISO's RA program. The Hetch Hetchy Project, as discussed above, generates enough System RA attributes to meets its obligations, but not enough to meet its Flexible or Local RA obligations.

Energy Loading Order

State Senate Bill 1037 (2005), effective January 1, 2006, requires POUs to first acquire all available energy efficiency, demand reduction and renewable resources that are cost effective, reliable and feasible prior to procuring new energy generation resources. This requirement is similar to the Energy Action Plan adopted jointly by the CPUC, the California Energy Commission and the California Power Authority to establish an "energy loading order" for California's electric utilities that focuses first on decreasing electricity demand by increasing energy efficiency and demand response, then meeting new generation needs first with renewable and distributed generation resources, and lastly with clean fossil-fueled generation.

In 2008, the Board of Supervisors, in its Resolution 227-08, adopted the policy goals outlined in the Energy Action Plan and energy loading order to guide SFPUC energy procurement. San Francisco's 2011 Updated Electricity Resource Plan, approved by the SFPUC in its Resolution 11-0035 and by the Board of Supervisors in its Resolution 349-11, reaffirmed the use of the energy loading order to meet future energy needs.

State Assembly Bill 2021 (2006), signed by then-Governor Schwarzenegger on September 29, 2006, requires that POUs establish, report and explain the basis of their annual energy efficiency and demand reduction targets over a 10-year planning horizon. The SFPUC submits annual reports to the California Energy Commission through the California Municipal Utilities Association, which submitted its 16th Edition report in 2022.

Community Choice Aggregation Service

State law allows a local government entity to sell electricity directly to customers within the entity's jurisdiction through a CCA program when the customers in that jurisdiction are served by a for profit, investor-owned utility. Under a CCA program, a public entity could develop a portfolio of energy supplies that it purchased or produced to meet specific local targets for renewable energy or to meet other policy and service objectives. Transmission and distribution services would continue to be provided by the investor-owned utility subject to CPUC tariffs. Under State law, customers within a CCA's jurisdiction may choose to opt-out of the program.

The SFPUC began serving customers through CleanPowerSF, a CCA program, in May 2016. CleanPowerSF is subject to CPUC rules and oversight for implementing State laws including those related to RA, IRP, and RPS, and is "Separate System" under the Indenture. See "INTRODUCTION – The San Francisco Public Utilities Commission and the Power Enterprise" and "THE PUBLIC UTILITIES COMMISSION – Organization, Purposes and Powers – *CleanPowerSF*." The development of the CCA market in California, with 25 operational CCA programs serving more than 14 million customers in over 200 cities and counties throughout California, has resulted in more Raker Act-eligible wholesale counterparties for the Power Enterprise.

Energy Storage

State Assembly Bill 2514 (2010) (“**AB 2514**”) requires POUs to determine appropriate targets, if any, to procure viable and cost-effective energy storage systems to be achieved by December 31, 2016, and December 31, 2020. In response to AB 2514, the SFPUC determined in its Resolution 14-0147 that it had no near-term need for energy storage services apart from the potential use of energy storage to fulfill Local Resource Adequacy Capacity requirements, which was not cost-effective at that time. The SFPUC also decided to continue to evaluate energy storage as a procurement option going forward and to identify a pilot energy storage project. The Power Enterprise installed a solar and battery storage system in San Francisco, which became operational in 2021.

State Law Requirements Affecting Investor-Owned Utilities

The California State Constitution (Article XII) gives the CPUC the authority to regulate “[p]rivate corporations and persons that own, operate, control, or manage the production, generation, transmission, or furnishing of heat, light, water [or] power directly or indirectly to or for the public” (bracketed language added). The CPUC does not have authority over the rates and services offered by POUs such as the Power Enterprise, but the CPUC’s regulation of investor-owned utilities, particularly PG&E, can affect the SFPUC’s operations and programs, especially as to safety standards.

Much of the SFPUC’s electric load is served off of PG&E’s distribution system, and the SFPUC relies on PG&E’s transmission system (albeit under operational control of the CAISO) to deliver energy supplies to its load. These wholesale transactions are regulated by FERC. See “– Federal Law and Regulation.” Where SFPUC provides electric service to retail customers in the City, it does so in competition with PG&E. PG&E and Trans Bay Cable are subject to regulation by FERC with respect to applicable wholesale transactions and electricity transmission.

Future Regulation and Other Factors

The electric industry has been highly regulated throughout its history and is subject to continuing legislative and administrative regulation and reform. State and federal entities routinely consider changes to the regulations governing the electric industry. Recent proposals have included both those aimed at further deregulating the industry and those proposing additional regulations. The SFPUC is unable to predict at this time the impact any such proposals will have on the operations and finances of the SFPUC or the electric utility industry generally.

The electric utility industry in general has been, and in the future may be, affected by a number of other factors which could impact the financial condition and competitiveness of many electric utilities and the level of utilization of generating and transmission facilities. In addition to the factors discussed above, such factors include, among others, (a) the effects of compliance with rapidly changing environmental, safety, licensing, regulatory and legislative requirements other than those described above; (b) changes resulting from conservation and demand side management programs on the timing and use of electric energy; (c) changes resulting from a national energy policy; (d) the effects of competition from other electric utilities (including increased competition resulting from mergers, acquisitions, and “strategic alliances” of competing electric and natural gas utilities and from competitors transmitting less expensive electricity from much greater distances over an interconnected system); (e) the development and deployment of new methods of, and new facilities for, producing electricity at competitive prices; (f) the repeal of certain federal statutes that would have the effect of increasing the competitiveness of many investor owned utilities; (g) increased competition from independent power producers and marketers, brokers and federal power marketing agencies; (h) “self-generation” or “distributed generation” (for example, solar power, microturbines and fuel cells) by customers and others; (i) current and future requirements relating to the SFPUC’s ability to issue tax-exempt obligations, including restrictions on sales to non-qualified entities of the electricity from generation projects and transmission service from transmission line projects financed with tax-exempt obligations; (j) the effects of inflation on the operating and maintenance costs of electric utilities and their facilities; (k) actual results that differ from projected future load requirements; (l) increases in costs and uncertain availability of capital; (m) shifts in the availability and relative costs of different fuels (including the cost of natural gas); (n) sudden and dramatic increases in the price of energy purchased on the open market that may occur in times of high peak demand in an area of the country experiencing such high peak demand, as occurred, for example, in California’s energy crisis in 2000 and 2001; (o) issues relating to risk management procedures and practices with respect to, among other things, the purchase and sale of natural gas, energy and transmission capacity; (p) other legislative changes, voter initiatives, referenda and statewide propositions; (q) the effects of changes in the local, State, national or global economy; (r) supply chain disruptions; (s) the effects of possible manipulation of the electric markets; (t) natural disasters or other physical calamities, including, but not limited to, earthquakes and flood; (u) climate change and related regulations; and (v) issues relating to cybersecurity. Any of these factors (as well as other factors) could have an adverse effect on the financial condition of an electric utility, including the Power Enterprise.

This Official Statement includes a brief discussion of certain of the factors identified in the previous paragraph. It does not purport to be comprehensive or definitive, and these matters are subject to change subsequent to the date hereof. Extensive information on the electric utility industry is available from legislative and regulatory bodies and other sources in the public domain, and potential purchasers of the 2023A Bonds should obtain and review such information. The SFPUC is unable to predict what impact such factors will have on the SFPUC's electric system or the business operations and financial condition of the Power Enterprise, but such impacts could be significant. To the extent described herein, the SFPUC has taken steps to mitigate the potential impacts of a number of these factors.

CONSTITUTIONAL, STATUTORY AND CHARTER LIMITATIONS

State Law Limitations

Proposition 218. Proposition 218, a State ballot initiative known as the "Right to Vote on Taxes Act," was approved by California voters in 1996. The initiative added Articles XIIIC and XIIID to the California Constitution. Article XIIID creates additional requirements for the imposition by most local governments (including the SFPUC) of general taxes, special taxes, assessments and "property-related" fees and charges. Article XIIID explicitly exempts fees and charges for the provision of electric service from its provisions.

Article XIIIC extends the people's initiative powers to the reduction or repeal of local taxes, assessments and fees and charges imposed prior to its effective date (November 1996). The California Supreme Court in *Bighorn-Desert View Water Agency v. Verjil*, 46 Cal.Rptr.3d 73 (2006) concluded that, under Article XIIIC, local voters by initiative may reduce a public agency's water rates and delivery charges, as those are "property related" fees or charges within the meaning of Article XIIID. As the terms "fees" and "charges" are not defined in Article XIIIC, however, its extension of the initiative powers may apply not only to "property-related" fees and charges, as defined in Article XIIID, but also, for example, to fees and charges for the provision of electric services which are exempted from Article XIIID. The California appellate court suggested as much in *Bock* v. *City Council of Lompoc*, 109 Cal.App.3d 43 (1980). The SFPUC is unable to determine whether the California courts will hold that rates for electric service are subject to the initiative process or, if they are, what limitations will apply to that process.

Proposition 26. The California electorate adopted Proposition 26 at the November 2, 2010 election, amending Article XIIIC of the California Constitution. Proposition 26 imposes a majority voter approval requirement on local governments such as the City with respect to certain fees and charges for general purposes, and a two-thirds voter approval requirement with respect to certain fees and charges for special purposes. The initiative was designed to supplement tax limitations California voters adopted when they approved Proposition 13 in 1978, and other measures. Proposition 26 applies by its terms to any levy, charge or exaction imposed, increased or extended by a local government on or after November 3, 2010. Proposition 26 deems any such levy, charge or fee to be a "tax", requiring voter approval unless it comes within one of the listed exceptions. Proposition 26 expressly excludes from its definition of a "tax", among other things, a charge imposed for a specific government service or product provided directly to the payor that is not provided to those not charged, and which does not exceed the reasonable costs to the local government of providing the service or product.

Proposition 26 is subject to interpretation by California courts, including the extent to which it is applicable to pre-existing electric rates and general fund transfers. A number of lawsuits have been filed against public agencies in California relating to electric utility fund transfers. In *Citizens for Fair REU Rates v. City of Redding* (filed on January 20, 2015 and modified on February 19, 2015), for example, the California Court of Appeal considered a ratepayer challenge to a "payment in lieu of taxes" (or "**PILOT**") required by the City of Redding to be made by its electric utility as an annual budgetary transfer amount without voter approval. The city's PILOT was designed to compensate the general fund for the costs of services that other city departments provide to the electric utility. The amount of the PILOT was equivalent to the *ad valorem* taxes the electric utility would have had to pay if the electric utility were privately owned. The suits alleged that the PILOT was passed through to the city's electric utility customers as part of the rates and charges for electric service in excess of the reasonable costs to the city of providing electric service. The Court of Appeal determined that Proposition 26 has no retroactive effect as to local taxes that existed prior to November 3, 2010, but found that since the PILOT was subject to the city council's recurring discretion, the PILOT did not escape the purview of Proposition 26. The Court of Appeal concluded that the PILOT constituted a "tax" under Proposition 26 for which the city must secure voter approval unless the city proved that the amount collected was necessary to cover the reasonable costs to the city of providing electric service. On April 29, 2015, the California Supreme Court granted review of the decision of the Court of Appeal. The California Supreme Court rendered its decision on August 27, 2018, reversing the judgment of the Court of Appeal. The California Supreme Court determined that the budgetary transfer from the Redding electric utility to the city's general fund, calculated by using the PILOT, itself is not the type of exaction that is subject to Article XIIIC of the California Constitution. The court reasoned that it is only the Redding electric utility rate, not the PILOT, that is imposed on customers for electric service. The California Supreme Court concluded that the challenged rate did not exceed the reasonable costs of providing electric service, and therefore did not constitute a tax.

The City does not collect a "payment in lieu of taxes" payable from the Power Enterprise, but the SFPUC does make transfers to the City's General Fund from the Power Enterprise for direct services provided to the Power Enterprise and for general City overhead costs allocable to the Power Enterprise. See "FINANCIAL OPERATIONS – Payments to/from the City." In addition, the City's General Fund as well as various City departments and agencies which are supported by the City's General Fund pay rates for power delivered by the Power Enterprise that are lower than those paid by other Power Enterprise customers of a comparable class. See "FINANCIAL OPERATIONS – Rate-Setting Process; Rates." The SFPUC is unable to predict the ultimate impact of Proposition 26 on the SFPUC and its charges for electricity.

Initiative 1935. A voter initiative entitled "The Taxpayer Protection and Government Accountability Act" ("**Initiative 1935**") has been determined to be eligible for the November 2024 Statewide general election and, unless withdrawn by its proponent prior to June 27, 2024, will be certified as qualified for the ballot in such election. Were it to be adopted by a majority of voters in the Statewide general election, Initiative 1935 would amend the California Constitution to, among other things, provide that charges for services or product provided directly to the payor (such as charges for power) are "taxes" subject to voter approval unless the local government can prove by clear and convincing evidence that the charge is reasonable and does not exceed the "actual cost" of providing the service or product, defined as "(i) the minimum amount necessary to reimburse the government for the cost of providing the service or the product to the payor and (ii) where the amount charged is not used by the government for any purpose other than reimbursing that cost." If adopted, Initiative 1935 would be subject to judicial interpretation. The SFPUC is unable to predict whether and how Initiative 1935, if adopted, would be interpreted by the courts, and there can be no assurance that any such interpretation or application would not have an adverse impact on the SFPUC, the Power Enterprise or Power Revenues.

Charter Limitations

The Charter generally requires that bonds (such as the Bonds) secured by revenues, other than refunding bonds, may be issued only with the assent of a majority of voters. The Charter, however, provides for specified exceptions to the voter approval requirement. See "OBLIGATIONS PAYABLE FROM REVENUES – Authority for Issuance of Revenue Bonds and Other Obligations Payable from Revenues."

Initiative Measures and Charter Amendments

Articles XIIIC and XIIID of the California Constitution and Proposition 26 were adopted pursuant to the State's initiative process. From time to time other initiative measures could be adopted by State voters, or by voters of San Francisco, placing additional limitations on the ability of the SFPUC to increase revenues.

The voters could adopt additional Charter amendments in the future that could limit the ability of the SFPUC to issue debt, affect the operation of the Power Enterprise, limit the ability of the SFPUC to enact rate increases, or implement other changes affecting the SFPUC and the Power Enterprise.

LITIGATION

The SFPUC is not aware of any litigation pending or threatened questioning the political existence of the City or the SFPUC or contesting the SFPUC's power to fix electric rates and charges, or in any way questioning or affecting:

(i) the proceedings under which the 2023A Bonds are to be issued;

(ii) the validity of any provision of the 2023A Bonds or the Indenture;

(iii) the pledge of Revenues, after payment of Operation and Maintenance Expenses and any Priority R&R Fund Deposits, by the SFPUC under the Indenture; or

(iv) the titles to office of the present members of the Board of Supervisors and the Commission.

There are a number of suits and claims pending against the City and the SFPUC, which may include personal injury, wrongful death and other suits and claims against which the City may self-insure. The aggregate amount of the self-insured liabilities of the City and the SFPUC which may result from such suits and claims if determined adversely to the City or the SFPUC will not, in the opinion of the City Attorney, materially impair the ability of the SFPUC to pay principal of or interest on the 2023A Bonds as they become due. There is no litigation pending, with service of process having been accomplished, against the City or the SFPUC which if determined adversely to the City or the SFPUC would, in the opinion of the City Attorney, materially impair the ability of the SFPUC to pay principal of and interest on the 2023A Bonds as they become due.

TAX MATTERS

In the opinion of Stradling Yocca Carlson & Rauth, a Professional Corporation, Bond Counsel, under existing statutes, regulations, rulings and judicial decisions, and assuming the accuracy of certain representations and compliance with certain covenants and requirements described herein, interest on the 2023A Bonds is excluded from gross income for federal income tax purposes and is not an item of tax preference for purposes of calculating the federal alternative minimum tax imposed on individuals. However, it should be noted that for tax years beginning after December 31, 2022, with respect to applicable corporations as defined in Section 59(k) of the Code, generally certain corporations with more than $1,000,000,000 of average annual adjusted financial statement income, interest with respect to the 2023A Bonds might be taken into account in determining adjusted financial statement income for purposes of computing the alternative minimum tax imposed by Section 55 of the Code on such corporations. In the further opinion of Bond Counsel, interest on the 2023A Bonds is exempt from State of California personal income tax.

Bond Counsel's opinion as to the exclusion from gross income for federal income tax purposes of interest on the 2023A Bonds is based upon certain representations of fact and certifications made by the SFPUC and others and is subject to the condition that the SFPUC comply with all requirements of the Code that must be satisfied subsequent to the issuance of the 2023A Bonds to assure that interest on the 2023A Bonds will not become includable in gross income for federal income tax purposes. Failure to comply with such requirements of the Code might cause interest on the 2023A Bonds to be included in gross income for federal income tax purposes retroactive to the date of issuance of the 2023A Bonds. The SFPUC has covenanted to comply with all such requirements.

The amount by which a 2023A Bond owner's original basis for determining loss on sale or exchange in the applicable 2023A Bond (generally, the purchase price) exceeds the amount payable on maturity (or on an earlier call date) constitutes amortizable bond premium, which must be amortized under Section 171 of the Code; such amortizable bond premium reduces the owner's basis in the applicable bond (and the amount of tax-exempt interest received), and is not deductible for federal income tax purposes. The basis reduction as a result of the amortization of bond premium may result in an owner realizing a taxable gain when a 2023A Bond is sold by the owner for an amount equal to or less (under certain circumstances) than the original cost of the 2023A Bond to the owner. Purchasers of the 2023A Bonds should consult their own tax advisors as to the treatment, computation and collateral consequences of amortizable bond premium.

The IRS has initiated an expanded program for the auditing of tax exempt bond issues, including both random and targeted audits. It is possible that the 2023A Bonds will be selected for audit by the IRS. It is also possible that the market value of the 2023A Bonds might be affected as a result of such an audit of the 2023A Bonds (or by an audit of similar municipal obligations). No assurance can be given that in the course of an audit, as a result of an audit, or otherwise, Congress or the IRS might not change the Code (or interpretation thereof) subsequent to the issuance of the 2023A Bonds to the extent that it materially adversely affects the exclusion from gross income of interest on the 2023A Bonds or their market value.

Subsequent to the issuance of the 2023A Bonds there might be federal, state, or local statutory changes (or judicial or regulatory changes to or interpretations of federal, state, or local law) that affect the federal, state, or local tax treatment of the 2023A Bonds including the imposition of additional federal income or state taxes on owners of tax-exempt state or local obligations, such as the 2023A Bonds. The introduction or enactment of any of such changes could adversely affect the market value or liquidity of the 2023A Bonds. No assurance can be given that subsequent to the issuance of the 2023A Bonds statutory changes will not be introduced or enacted or judicial or regulatory interpretations will not occur having the effects described above. Before purchasing any of the 2023A Bonds, all potential purchasers should consult their tax advisors regarding possible statutory changes or judicial or regulatory changes or interpretations, and their collateral tax consequences relating to the 2023A Bonds.

Bond Counsel's opinion with respect to the 2023A Bonds may be affected by actions taken (or not taken) or events occurring (or not occurring) after the date of issuance of the 2023A Bonds. Bond Counsel has not undertaken to determine, or to inform any person, whether any such actions or events are taken or do occur. The Indenture and the Tax Certificate relating to the 2023A Bonds permit certain actions to be taken or to be omitted if a favorable opinion of Bond Counsel is provided with respect thereto. Bond Counsel expresses no opinion as to the effect on the exclusion from gross income of interest on the 2023A Bonds for federal income tax purposes with respect to any 2023A Bond if any such action is taken or omitted based upon the advice of counsel other than Stradling Yocca Carlson & Rauth, a Professional Corporation.

Although Bond Counsel has rendered its opinion that interest on the 2023A Bonds is excluded from gross income for federal income tax purposes provided that the SFPUC continues to comply with certain requirements of the Code, the ownership of the 2023A Bonds and the accrual or receipt of interest on the 2023A Bonds may otherwise affect the tax liability of certain persons. Bond Counsel expresses no opinion regarding any such tax consequences. Accordingly, before purchasing any of the 2023A Bonds, all potential purchasers should consult their tax advisors with respect to collateral tax consequences relating to the 2023A Bonds.

A copy of the proposed form of opinion of Bond Counsel relating to the 2023A Bonds is included in Appendix C hereto.

CERTAIN LEGAL MATTERS

Certain legal matters incident to the authorization, sale and delivery of the 2023A Bonds are subject to the approval of Stradling Yocca Carlson & Rauth, a Professional Corporation, Newport Beach, California, Bond Counsel to the SFPUC. Certain legal matters are being passed upon for the SFPUC by the City Attorney and by Orrick, Herrington & Sutcliffe LLP, San Francisco, California, Disclosure Counsel. Certain legal matters are being passed upon for the Underwriters by Husch Blackwell LLP, Oakland, California. Bond Counsel and Disclosure Counsel will receive compensation that is contingent upon the sale and delivery of the 2023A Bonds.

The form of approving opinion of Bond Counsel is set forth in Appendix C and will be available at the time of delivery of the 2023A Bonds. Bond Counsel is not passing upon and undertakes no responsibility for the accuracy, completeness or fairness of the information contained in this Official Statement.

Orrick, Herrington & Sutcliffe LLP has served as Disclosure Counsel to the SFPUC and in such capacity has advised the SFPUC with respect to the requirements of applicable securities laws and participated with responsible SFPUC officials and staff in conferences and meetings where information contained in this Official Statement was reviewed for accuracy and completeness. Disclosure Counsel is not responsible for the accuracy or completeness of the information presented in this Official Statement and has not undertaken to independently verify any of such information. Rather, the SFPUC is solely responsible for the accuracy and completeness of the information contained in this Official Statement. Upon the issuance of the 2023A Bonds, Orrick, Herrington & Sutcliffe LLP will deliver a letter to the SFPUC concerning certain matters with respect to this Official Statement. No purchaser or holder of the 2023A Bonds, or other person or party other than the SFPUC, will be entitled to rely on such letter or on the fact that Orrick, Herrington & Sutcliffe LLP has acted as Disclosure Counsel to the SFPUC.

RATINGS

The 2023A Bonds have been rated "AA" by S&P Global Ratings, a division of Standard & Poor's Financial Services LLC ("**S&P**") and "AA-" by Fitch Ratings, Inc. ("**Fitch**"). The ratings assigned by S&P and Fitch express only the views of the respective rating agencies. The explanation of the significance of these ratings, and any outlook associated with these ratings, may be obtained from S&P and Fitch, respectively. Each rating agency generally bases its rating on its own investigations, studies, and assumptions. The SFPUC has provided certain additional information and materials to the rating agencies (some of which does not appear in this Official Statement).

A securities rating is not a recommendation to buy, sell or hold securities and may be subject to revision or withdrawal at any time. There is no assurance such ratings will continue for any given period of time or that such ratings will not be revised downward or withdrawn entirely by the rating agencies, if in the judgment of such rating agencies, circumstances so warrant. Any such downward revision or withdrawal of such ratings may have an adverse effect on the market price of the 2023A Bonds. The SFPUC undertakes no responsibility to maintain its current ratings on the 2023A Bonds or to oppose any such downward revision, suspension or withdrawal.

UNDERWRITING

The 2023A Bonds are being purchased by J.P. Morgan Securities LLC, as representative on behalf of itself, Morgan Stanley & Co. LLC and Siebert Williams Shank & Co., LLC (collectively, the "**Underwriters**").

The Underwriters have agreed to purchase from the SFPUC the 2023A Bonds at a purchase price of $130,989,582.14 (consisting of $123,905,000.00 aggregate principal amount of the 2023A Bonds, plus original issue premium of $7,324,363.80, less an underwriters' discount of $239,781.66). Under the bond purchase contract to be entered into in connection with the purchase of the 2023A Bonds, the Underwriters will be obligated to purchase all of the 2023A Bonds if any are purchased, the obligation to make such purchase being subject to certain terms and conditions to be satisfied by the SFPUC.

The Underwriters have certified the reoffering prices and yields set forth on the inside cover page of this Official Statement for the 2023A Bonds. The SFPUC takes no responsibility for the accuracy of these prices and yields. The Underwriters may offer and sell the 2023A Bonds to certain dealers and others at prices lower than the offering prices stated on the inside cover page. The offering prices may be changed from time to time by the Underwriters.

The Underwriters and their respective affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, advisory, investment management, principal investment, hedging, financing and brokerage activities. Certain of the Underwriters and their respective affiliates have, from time to time, performed, and may in the future perform, various investment banking services for the SFPUC for which they received or will receive customary fees.

In the ordinary course of their various business activities, the Underwriters and their respective affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (which may include bank loans and/or credit default swaps) for their own account and for the accounts of their customers and may at any time hold long and short positions in such securities and instruments. Such investment and securities activities may involve securities and instruments of the SFPUC.

J.P. Morgan Securities LLC ("**JPMS**"), one of the Underwriters of the 2023A Bonds, has entered into negotiated dealer agreements (each, a "**Dealer Agreement**") with each of Charles Schwab & Co., Inc. ("**CS&Co.**") and LPL Financial LLC ("**LPL**") for the retail distribution of certain securities offerings at the original issue prices.

Pursuant to each Dealer Agreement, each of CS&Co. and LPL may purchase 2023A Bonds from JPMS at the original issue price less a negotiated portion of the selling concession applicable to any 2023A Bonds that such firm sells.

Morgan Stanley & Co. LLC., an Underwriter of the 2023A Bonds, has entered into a retail distribution arrangement with its affiliate Morgan Stanley Smith Barney LLC. As part of the distribution arrangement, Morgan Stanley & Co. LLC may distribute municipal securities to retail investors through the financial advisor network of Morgan Stanley Smith Barney LLC. As part of this arrangement, Morgan Stanley & Co. LLC may compensate Morgan Stanley Smith Barney LLC for its selling efforts with respect to the 2023A Bonds.

FINANCIAL STATEMENTS

Audited financial statements of the SFPUC's Power Enterprise for Fiscal Years Fiscal Years 2020-21 and 2021-22 are attached as Appendix B. The financial statements attached as Appendix B include financial information respecting Hetch Hetchy Water and CleanPowerSF, which are not part of the Power Enterprise. See "APPENDIX B – SFPUC POWER ENTERPRISE FINANCIAL STATEMENTS." Such financial statements have been audited by KPMG LLP (the "**Auditor**"), independent certified public accountants.

The audited financial statements of the SFPUC are public documents and the SFPUC has not requested nor did the SFPUC obtain permission from the Auditor to include the audited financial statements as an appendix to this Official Statement. Accordingly, the Auditor has made no representation in connection with inclusion of the audits herein that there has been no material change in the financial condition of the SFPUC since the most recent audit was concluded. The Auditor has not been engaged to perform and has not performed, since the date of its report included herein, any procedures on the financial statements addressed in that report. The Auditor also has not performed any procedures relating to this Official Statement.

CONTINUING DISCLOSURE

The SFPUC will covenant for the benefit of the Owners and Beneficial Owners of the 2023A Bonds, under a continuing disclosure certificate dated as of the date of delivery (the "**Disclosure Certificate**"), to provide certain financial information and operating data (the "**Annual Report**") not later than March 31 following the end of its Fiscal Year (presently June 30), beginning on March 31, 2024, with the report for Fiscal Year 2022-23, and to promptly provide notices of the occurrence of certain enumerated events set forth in the Disclosure Certificate ("**Listed Events**").

The SFPUC will agree to file the Annual Report and any notice of Listed Events as described in the Disclosure Certificate. The specific nature of the information to be contained in the Annual Report or the notices of Listed Events is set forth in the Disclosure Certificate. These covenants will be made to assist the Underwriters in complying with the Rule. The form of the Disclosure Certificate is attached to this Official Statement as Appendix D.

On July 25, 2017, the SFPUC and U.S. Bank, National Association ("**U.S. Bank**") entered into revolving credit agreements (the "**Revolving Credit Agreements**") providing for the extension of credit to the SFPUC in the amount of $100,000,000 for the Water Enterprise and $75,000,000 for the Wastewater Enterprise. The SFPUC has not drawn on either credit facility and has no outstanding obligations thereunder. On January 7, 2022, the SFPUC and U.S. Bank entered into amendments to the Revolving Credit Agreements extending the respective commitment expiration dates to July 18, 2024. The SFPUC filed Listed Event notices with respect to such extensions on February 3, 2022.

MUNICIPAL ADVISOR

PFM California Advisors LLC, San Francisco, California, is acting as municipal advisor to the SFPUC with respect to the 2023A Bonds (the "**Municipal Advisor**"). The Municipal Advisor has assisted the SFPUC in the preparation of this Official Statement and in other matters relating to the planning, structuring, execution and delivery of the 2023A Bonds. The Municipal Advisor has not independently verified any of the data contained herein or conducted a detailed investigation of the affairs of the SFPUC to determine the accuracy or completeness of this Official Statement. Because of its limited participation, the Municipal Advisor assumes no responsibility for the accuracy or completeness of any of the information contained herein. The Municipal Advisor will not purchase or make a market in any of the 2023A Bonds.

The compensation to be received by the Municipal Advisor from the SFPUC for services provided in connection with the planning, structuring, execution and delivery of the 2023A Bonds is contingent upon the sale and delivery of the 2023A Bonds.

INDEPENDENT PRICING CONSULTANT

Backstrom McCarley Berry & Co., LLC, San Francisco, California, is acting as an independent pricing consultant to the SFPUC with respect to the 2023A Bonds (the "**Independent Pricing Consultant**"). As required by the SFPUC's Debt Policies, the Independent Pricing Consultant will monitor the pricing process and provide an independent pricing report to the SFPUC certifying whether the pricing results were fair and reasonable to the SFPUC in light of prevailing market conditions. The Pricing Consultant has not independently verified any of the data contained herein or conducted a detailed investigation of the affairs of the SFPUC to determine the accuracy or completeness of this Official Statement. Because of its limited participation, the Pricing Consultant assumes no responsibility for the accuracy or completeness of any of the information contained herein. The Pricing Consultant will not purchase or make a market in any of the 2023A Bonds.

The compensation to be received by the Pricing Consultant from the SFPUC for services provided in connection with the planning, structuring, execution and delivery of the 2023A Bonds is contingent upon the sale and delivery of the 2023A Bonds.

MISCELLANEOUS

References made herein to certain documents and reports are brief summaries thereof that do not purport to be complete or definitive, and reference is made to such documents and reports for full and complete statements of the contents thereof.

The appendices to this Official Statement are integral parts of this Official Statement. Investors must read the entire Official Statement, including the appendices, to obtain information essential to making an informed investment decision.

Any statements in this Official Statement involving matters of opinion, whether or not expressly so stated, are intended as such and not as representations of fact. This Official Statement is not to be construed as a contract or agreement between the SFPUC and the purchasers or owners of any of the Bonds. The preparation and distribution of this Official Statement has been authorized by the SFPUC.

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APPROVAL AND DELIVERY

This Official Statement has been duly approved, executed and delivered by the SFPUC.

PUBLIC UTILITIES COMMISSION OF THE
CITY AND COUNTY OF SAN FRANCISCO

By: /s/ Dennis J. Herrera
General Manager

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APPENDIX A

SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE

The following is a brief summary of certain provisions of the Indenture. This summary does not purport to be complete or definitive and is qualified in its entirety by reference to the full terms of the Indenture. Reference is directed to the Indenture for the complete text thereof.

Definitions

"**Accreted Value**" means, with respect to any Capital Appreciation Bond, the principal amount thereof plus the interest accrued thereon from its delivery date, compounded at the approximate interest rate thereof on each date specified therein, to the date of calculation.

"**Additional R&R Fund Deposits**" means, for any Fiscal Year or other designated twelve-month period, the amount, if any, in addition to any Priority R&R Fund Deposits, deposited in the Reconstruction and Replacement Fund from Revenues prior to deposits in such Fiscal Year for payment of any Subordinate Obligations.

"**Annual Debt Service**" means, as of any date of calculation, for any Fiscal Year (or other designated twelve-month period) the amount of Principal and interest becoming due and payable on all Outstanding Bonds in such Fiscal Year (or other designated twelve-month period); provided, that for the purposes of computing Annual Debt Service:

(a) the interest rate on Variable Rate Bonds will be assumed to be 80% of the 30-year Revenue Bond Index published in *The Bond Buyer* on such date of calculation (or, if *The Bond Buyer* ceases to be published or ceases to publish such index, any comparable successor nationally recognized financial publication or index designated by the SFPUC);

(b) notwithstanding clause (a), if a Swap Agreement is in effect pursuant to which the SFPUC is obligated to pay a fixed rate with respect to any Variable Rate Bonds, the interest rate on such Variable Rate Bonds during the period such Swap Agreement is scheduled to be in effect will be assumed to be the fixed rate specified in such Swap Agreement;

(c) if a Swap Agreement is in effect with respect to any Bonds pursuant to which the SFPUC receives a fixed rate in exchange for paying a variable rate, the interest rate on such Bonds during the period such Swap Agreement is scheduled to be in effect will be assumed to be the sum of (A) the interest rate on such Bonds determined as if such Bonds were Variable Rate Bonds, plus (B) the positive difference, if any, between the fixed rate of interest borne by such Bonds and the fixed rate the SFPUC receives pursuant to such Swap Agreement;

(d) notwithstanding clause (a), the interest rate on Paired Bonds will be assumed to be the aggregate fixed interest rate to be paid by the SFPUC with respect to such Paired Bonds;

(e) the Principal of any Balloon Bonds will be assumed to become due and payable in equal installments in each Fiscal Year for a period of 25 years from the date of calculation;

(f) the Principal and interest payments on Bonds will be excluded to the extent such payments are to be made from amounts on deposit, as of the date of calculation, with the Trustee or any other fiduciary in an escrow or other account irrevocably dedicated therefor, including interest payments that are to be paid from the proceeds of Bonds held by the Trustee or any other fiduciary; and

(g) the interest coming due in any Fiscal Year will be reduced by the amount of Refundable Credits due to the SFPUC with respect thereto.

"**Authorized Investments**" means any obligations or investments in which the Treasurer may legally invest the SFPUC's funds.

"**Available Funds**" means any unencumbered amounts, including non-appropriated fund balances and reserves, and cash and the book value of investments held by the Treasurer for the Power Enterprise, that the SFPUC reasonably expects would be available, as of any date of calculation, to pay Principal of and interest on Bonds when due.

"**Balloon Bonds**" means the aggregate Principal of Bonds of a Series (including Capital Appreciation Bonds) that becomes due and payable, either at scheduled maturity, by Mandatory Sinking Fund Payment or by mandatory tender for purchase, in any Fiscal Year that constitutes 25% or more of the initial aggregate Principal of such Series of Bonds.

"**Beneficial Owner**" means, for any Bond held by a nominee, the owner of the beneficial interest in such Bond.

"**Board of Supervisors**" means the duly elected and acting Board of Supervisors of the City.

"**Bond Counsel**" means a firm of attorneys, appointed by the SFPUC with the consent of the City Attorney of the City, with substantial experience and expertise in the field of municipal finance law and the federal and state tax laws related thereto whose opinions are widely recognized and accepted by the municipal finance markets.

"**Bond Coverage Ratio**" for any Fiscal Year means the ratio of (a) (i) Net Revenues in such Fiscal Year, plus (ii) Available Funds in such Fiscal Year, to (b) Annual Debt Service on the Outstanding Bonds in such Fiscal Year.

"**Bond Fund**" means each fund of that name established pursuant to the Indenture.

"**Bond Register**" means the books maintained for the registration and transfer of Bonds.

"**Bond Retirement Account**" means each account of that name established pursuant to the Indenture.

"**Bond Year**" means, with respect to a Series of Bonds, the Bond Year set forth in the Supplemental Trust Indenture authorizing the issuance of such Series of Bonds.

"**Bonds**" means the Public Utilities Commission of the City and County of San Francisco Power Revenue Bonds issued pursuant to, under authority of and for the purposes provided in the Indenture.

"**Book-Entry Bonds**" means Bonds for which a Securities Depository or its nominee is the Owner.

"**Business Day**" means any day other than (a) a Saturday, Sunday, or a day on which banking institutions in the State or the State of New York are authorized or obligated by law or executive order to be closed, (b) a day upon which the principal office of the SFPUC or the Trustee is authorized or required by law to be closed, or (c) with respect to a Series of Bonds, any day so specified in the Supplemental Trust Indenture authorizing the issuance of such Series of Bonds.

"**Capital Appreciation Bonds**" means any Bonds the interest on which is not scheduled to be paid until the maturity or prior redemption thereof, or the conversion thereof to Current Interest Bonds.

"**Capitalized Interest Account**" means each account of that name established pursuant to the Indenture.

"**Certificate**" of the SFPUC means a written certificate signed by a duly authorized officer or employee of the SFPUC.

"**Charter**" means the Charter of the City and County of San Francisco, as supplemented and amended, and any new or successor Charter.

"**City**" means the City and County of San Francisco, a chartered city and county and municipal corporation duly organized and existing under and by virtue of the Constitution and laws of the State of California.

"**Code**" means the Internal Revenue Code of 1986, as amended and supplemented, and all regulations promulgated from time to time by the United States Department of the Treasury with respect thereto.

"**Commission**" means the governing body of the SFPUC as established pursuant to the Charter.

"**Common Reserve Account**" means the account of that name established in the Reserve Fund pursuant to the Indenture to secure the Common Reserve Series.

"**Common Reserve Series**" means those Series of Bonds secured by the Common Reserve Account as provided in the Supplemental Trust Indenture providing for each such Series.

"**Computation Period**" means a five-year period ending on the last day of each fifth Bond Year.

"**Consulting Engineer**" means an independent consulting engineering firm appointed by the SFPUC with substantial experience and expertise in the area of electric utility engineering consulting whose opinions and views are widely recognized and accepted in the municipal finance markets.

"**Credit Facility**" means a letter of credit, line of credit, or other credit or liquidity facility provided by a financial institution or insurance company, including municipal bond insurance and guarantees, delivered to the Trustee for a Series of Bonds or portion thereof, which provides for payment, in accordance with the terms thereof, of the Principal, Purchase Price and/or Redemption Price of and/or interest on such Series of Bonds or portion thereof.

"**Credit Facility Provider**" means the financial institution or insurance company that is providing a Credit Facility.

"**Current Interest Bonds**" means any Bonds, other than Capital Appreciation Bonds, which pay interest at least annually to the Owners thereof commencing within 18 months from the date of issuance thereof.

"**DTC**" means The Depository Trust Company, New York, New York, or its successor.

"**Event of Default**" means each event defined as such in the Indenture.

"**Fiscal Year**" means the twelve-month period selected from time to time by the SFPUC as the official fiscal year of the Power Enterprise.

"**Fitch**" means Fitch Ratings, Inc., and its successors and assigns, except that if such organization will be dissolved or liquidated or will no longer perform the functions of a securities credit rating agency, then the term "Fitch" will be deemed to refer to any other nationally recognized securities credit rating agency selected by the SFPUC.

"**Fund**" means any fund or account established under the Indenture.

"**GAAP**" means generally accepted accounting principles from time to time applicable to governmental entities such as the SFPUC.

"**Government Securities**" means direct obligations of, or obligations the timely payment of which are unconditionally guaranteed by, the United States of America.

"**Hetch Hetchy Project**" means the Hetch Hetchy Water and Power Project, including the O'Shaughnessy Dam, the Hetch Hetchy Reservoir, the Canyon and Mountain Tunnels, the Kirkwood, Moccasin and Holms Powerhouses, Cherry Lake and its dam, Lake Eleanor and its dam, the related water storage and transportation and hydro-electric generating facilities down to and including the Moccasin Powerhouse, all located in Yosemite National Park, Stanislaus National Forest and Tuolumne County, the rights to which were granted to the City by the Raker Act of 1913, and the related transmission facilities down to the City of Newark.

“**Indenture**” means the Trust Indenture, dated as of May 1, 2015, by and between the SFPUC and the Trustee, as supplemented or amended, together with any Supplemental Trust Indentures.

“**Insolvent**” means, with respect to any Person (a) such Person will have instituted proceedings to be adjudicated a bankrupt or insolvent, will have consented to the institution of bankruptcy or insolvency proceedings against it, will have filed a petition or answer or consent seeking reorganization or relief under the federal Bankruptcy Code or any other similar applicable federal or state law, or will have consented to the filing of any such petition or to the appointment of a receiver, liquidator, assignee, trustee or sequestrator or other similar official of itself or of any substantial part of its property, or will fail to timely controvert an involuntary petition filed against it under the federal Bankruptcy Code, or will consent to the entry of an order for relief under the federal Bankruptcy Code or will make an assignment for the benefit of creditors or will admit in writing its inability to pay its debts generally as they become due; or (b) a decree or order by a court having jurisdiction in the premises adjudging such Person as bankrupt or insolvent, or approving as properly filed a petition seeking reorganization, arrangement, adjustment or composition of or in respect of such person under the federal Bankruptcy Code or any other similar applicable federal or state law or for relief under the federal Bankruptcy Code after an involuntary petition has been filed against such Person, or appointing a receiver, liquidator, assignee, trustee or sequestrator or other similar official of such Person or of any substantial part of its property, or ordering the winding up or liquidation of its affairs, will have been entered and will have continued unstayed and in effect for a period of 90 consecutive days.

“**Interest Account**” means each account of that name established pursuant to the Indenture.

“**Interest Payment Date**” means the date or dates specified as such in a Supplemental Trust Indenture with respect to any Series of Bonds.

“**Mandatory Sinking Fund Payment**” means, with respect to any Term Bond, an amount required by the Supplemental Trust Indenture authorizing the issuance of the Series of Bonds of which such Term Bond is a part to be deposited in the Bond Retirement Account created for such Series of Bonds for the mandatory purchase or redemption of such Term Bond or portion thereof prior to the final maturity thereof.

“**Moody’s**” means Moody’s Investors Service, Inc. and its successors and assigns, except that if such organization will be dissolved or liquidated or will no longer perform the functions of a securities credit rating agency, then the term “Moody’s” will be deemed to refer to any other nationally recognized securities credit rating agency selected by the SFPUC.

“**Net Revenues**” for any Fiscal Year (or other designated twelve-month period) means Revenues in such Fiscal Year (or other designated twelve-month period), less (a) Operation and Maintenance Expenses and (b) any Priority R&R Fund Deposit for such Fiscal Year (or other designated twelve-month period).

“**Operation and Maintenance Expenses**” means the costs of the proper operation, maintenance and repair of the Power Enterprise and taxes, assessments or other governmental charges lawfully imposed on the Power Enterprise or the Revenues, or payments in lieu thereof, as determined in accordance with GAAP. Operation and Maintenance Expenses shall include the payment of pension charges and proportionate payments to such compensation and other insurance or outside reserve funds as the SFPUC may establish or the Board of Supervisors may require with respect to employees of the Power Enterprise, as provided in Section 16.103(a) of the Charter. Operation and Maintenance Expenses also include repairs and maintenance costs that constitute operating expenses in accordance with GAAP. Operation and Maintenance Expenses do not include (a) any allowance for amortization, depreciation or obsolescence, (b) operation and maintenance expenses of the Water Enterprise, (c) operation and maintenance expenses of the Wastewater Enterprise, (d) operation and maintenance expenses of any Separate System, (e) any expense for which, or to the extent to which, the SFPUC is or will be paid or reimbursed from or by any source that is not included or includable as Revenues, (f) losses from any sale or other disposition of Power Enterprise assets, and (g) non-cash losses and costs that may be required or permitted under GAAP to be expensed, including deferred expenses and unrealized mark-to-market losses.

“**Order**” means a written order of the SFPUC signed by a duly authorized officer or employee of the SFPUC.

"**Original Bonds**" means bonds or other obligations payable from Revenues (other than Bonds) to be refunded by Refunding Bonds.

"**Outstanding**" means, as of any date, (a) when used with respect to the Bonds, all Bonds authenticated and delivered under the Indenture, except (i) Bonds theretofore cancelled or delivered to the Trustee for cancellation under the Indenture, (ii) Bonds in substitution for which other Bonds have been authenticated and delivered pursuant to the Indenture, (iii) Bonds that are deemed to be no longer outstanding in accordance with the Indenture and (iv) Bonds that are deemed to be no longer outstanding in accordance with the Supplemental Trust Indenture pursuant to which such Bonds were issued; and (b) when used with respect to other obligations for borrowed money, all obligations issued pursuant to the resolution or resolutions authorizing the issuance of such obligations other than obligations deemed to be no longer outstanding pursuant to such resolution or resolutions.

"**Owner**," with respect to a Bond, means the Person in whose name such Bond is registered.

"**Paired Bonds**" means Bonds (a) that are issued simultaneously, (b) that are designated as Paired Bonds in the Supplemental Trust Indenture authorizing the issuance thereof or in a Certificate of the SFPUC delivered at the time of issuance thereof, (c) the principal amount of each portion of which is equal and which matures and is subject to mandatory sinking fund redemption on the same date and in the same amount, and (d) the interest rates on which, taken together, result in an irrevocable fixed interest rate obligation of the SFPUC on the aggregate principal amount of such Bonds until the maturity or prior redemption of such Bonds.

"**Person**" means an individual, corporation, firm, association, partnership, trust, or other legal entity or group of entities, including a governmental entity or any agency or political subdivision thereof.

"**Power Enterprise**" means the SFPUC's Power Enterprise established and existing as of the date of the Indenture to provide electric power and related services to the City and its departments, agencies and commissions as well as other customers both in and outside of the City, including that portion of the Hetch Hetchy Project used for power generation, and all other power generation, transmission and distribution facilities and related facilities, streetlights, property and rights constituting a part of the Power Enterprise, together with any and all additions, improvements, betterments, renewals, replacements and repairs thereto and extensions thereof, but shall not include: (a) the Water Enterprise, (b) the Wastewater Enterprise, or (c) any Separate System.

"**Principal**" means, as of any date of calculation, (a) with respect to any Current Interest Bond, the principal amount thereof, and (b) with respect to any Capital Appreciation Bond, the Accreted Value thereof as of the date on which interest on such Capital Appreciation Bond is compounded next preceding such date of calculation (unless such date of calculation is a date on which such interest is compounded, in which case, as of such date).

"**Priority R&R Fund Deposits**" means, for any Fiscal Year or other designated twelve month period, the amount, if any, required by the Charter to be deposited in the Reconstruction and Replacement Fund from Revenues prior to deposits in such Fiscal Year into the Bond Fund.

"**Project Fund**" means each fund of that name established pursuant to the Indenture.

"**Purchase Price**" means, with respect to any Bond, the price payable upon the optional or mandatory tender for purchase of such Bond or portion thereof as set forth in the Supplemental Trust Indenture authorizing the issuance of the Series of Bonds of which such Bond is a part.

"**Qualified Counterparty**" means a party other than the SFPUC which is the party to a Swap Agreement and, at the time of execution and delivery of the Swap Agreement, (a) (i) whose senior debt obligations are or claims-paying ability is rated in one of the three highest rating categories of each of at least two Rating Agencies (without regard to any gradations within a rating category) or (ii) whose obligations under the Swap Agreement are guaranteed for the entire term of the Swap Agreement by a Person whose senior debt obligations are or claims-paying ability is rated in one of the three highest rating categories of each of at least two Rating Agencies (without regard to any gradations within a rating category) and (b) which is otherwise qualified to act as the party to a Swap Agreement with the SFPUC under any applicable law.

"**Rating Agencies**" means Fitch, Moody's and Standard & Poor's or any other nationally recognized securities credit rating agency selected by the SFPUC.

"**Rebate Amount**" means, with respect to each Series of Tax-Exempt Bonds, an amount equal to the sum required to be paid to the United States Department of the Treasury from time to time, if any, with respect to the investment of proceeds of such Series of Tax-Exempt Bonds, all as determined in accordance with Section 148 of the Code and the Supplemental Trust Indenture authorizing the issuance of such Series of Bonds.

"**Rebate Fund**" means each fund of that name established pursuant to the Indenture.

"**Reconstruction and Replacement Fund**" means the fund of that name established pursuant to the Indenture.

"**Record Date**" means the fifteenth day of the calendar month before each Interest Payment Date or such other date as specified as such in a Supplemental Trust Indenture for a Series of Bonds.

"**Redemption Price**" means, (a) with respect to any Bond or portion thereof; the Principal of such Bond or portion thereof plus the applicable premium, if any, payable upon redemption thereof pursuant to the provisions of such Bond and the Supplemental Trust Indenture authorizing the issuance of the Series of Bonds of which such Bond is a part, and (b) with respect to any other obligation for borrowed money or portion thereof, the principal or accreted value of such obligation or portion thereof plus the applicable premium, if any, payable upon redemption thereof pursuant to the provisions of such obligation and the resolution or resolutions authorizing the issuance or incurrence of such obligation.

"**Refundable Credits**" means amounts payable by the Federal government to the SFPUC under direct-pay subsidy programs substantially similar to the Build America Bond program under Section 54AA of the Code.

"**Refunding Bonds**" means all Bonds issued pursuant to the applicable provisions of the Indenture for the purpose of refunding Bonds or Original Bonds.

"**Registrar**" means the Person responsible for maintaining the Bond Register, which initially will be the Trustee.

"**Reserve Fund**" means the fund of that name established pursuant to the Indenture.

"**Reserve Account**" means each account of that name established pursuant to the Indenture, which Account may secure one or more Series of Bonds as provided therein or in the Supplemental Trust Indenture providing for the creation thereof.

"**Reserve Account Credit Facility**" means a letter of credit, insurance policy, surety bond, or other credit facility provided to the Trustee by a bank, insurance company or other financial institution whose senior unsecured debt obligations are, or whose claims-paying ability is, rated in the two highest rating categories by each of at least two (2) Rating Agencies at the time of delivery thereof, which provides for payment when due, in accordance with the terms thereof, of the Principal or Redemption Price of and/or interest on one or more Series of Bonds.

"**Reserve Requirement**" means, with respect to the Common Reserve Series, the least of (a) 10% of the stated Principal amount of the Common Reserve Series, (b) the maximum Annual Debt Service on the Common Reserve Series, and (c) 125% of the average Annual Debt Service on the Common Reserve Series and, with respect to any other Series of Bonds, such amount, if any, as shall be specified in the Supplemental Trust Indenture authorizing the issuance of such Series of Bonds.

"**Revenue Fund**" means the "Revenue Fund" created pursuant to the Indenture.

"**Revenues**" means all revenues, rates and charges received and accrued by the SFPUC for electric power and energy and other services, facilities and commodities sold, furnished or supplied by the Power Enterprise, together with income, earnings and profits therefrom (including interest earnings on the proceeds of any Bonds pending application thereof), as determined in accordance with GAAP. Revenues include payments to the Power Enterprise on or with respect to loans from any Separate System maintained by the SFPUC. Revenues do not include (a) proceeds from the issuance of any obligations for borrowed money, (b) amounts loaned to the Power Enterprise, (c) Swap Agreement Receipts, (d) proceeds from taxes, (e) customer deposits while retained as such, (f) contributions in aid of construction, (g) gifts, (h) grants, (i) insurance or condemnation proceeds that are properly allocable to a capital account, (j) non-cash revenues or gains that may be required or permitted under GAAP, including mark-to-market gains and deferred revenues, (k) money received by the SFPUC as the proceeds of the sale of any portion of the properties of the Power Enterprise, (l) amounts by their terms not available for the payment of Operation and Maintenance Expenses or Principal and interest on the Bonds, (m) Refundable Credits; (n) revenues of any Separate System, (o) Water Enterprise revenues as defined in the document or agreement governing the then-outstanding senior lien obligations of the Water Enterprise for borrowed money, and (p) Wastewater Enterprise revenues as defined in the document or agreement governing the then-outstanding senior lien obligations of the Wastewater Enterprise for borrowed money.

"**Securities Depository**" means a Person registered as a clearing agency under Section 17A of the Securities Exchange Act of 1934, or any successor legislation, or whose business is confined to the performance of the functions of a clearing agency with respect to exempted securities, as defined in Section 3(a)(12) of such Act, or any successor legislation, for the purposes of Section 17A thereof.

"**Separate System**" means any electric power or energy generation, transmission, distribution or other facilities, property and rights that may be purchased, constructed or otherwise acquired by the SFPUC where the revenues derived from the ownership and operation of which shall be pledged to the payment of bonds or other obligations for borrowed money issued or incurred to purchase, construct or otherwise acquire such facilities, property and rights and shall not be included in Revenues and the operation and maintenance expenses with respect to which will not be included in Operation and Maintenance Expenses.

"**Series**" means all of the Bonds designated by Supplemental Trust Indenture as being of the same series, regardless of variations in maturity, interest rate, redemption and other provisions, and any Bonds thereafter authenticated and delivered upon transfer or exchange or in lieu of or in substitution for (but not to refund) such Bonds as provided in the Indenture.

"**SFPUC**" means the Public Utilities Commission of the City and County of San Francisco, a department of the City duly constituted and existing under the Charter, and any departments, commissions, agencies or public bodies which shall succeed to the powers, duties and obligations of the SFPUC.

"**Standard & Poor's**" means Standard & Poor's Ratings Services, a Standard & Poor's Financial Services LLC business, and its successors and assigns, except that if such organization will be dissolved or liquidated or will no longer perform the functions of a securities credit rating agency, then the term "Standard & Poor's" will be deemed to refer to any other nationally recognized securities credit rating agency selected by the SFPUC.

"**State**" means the State of California.

"**Subordinate Obligations**" means, collectively, bonds, notes or other obligations of the SFPUC for borrowed money payable from and secured by a pledge of and lien and charge on Revenues junior and inferior to the Bonds and the payments required to be made into the Bond Funds and the Reserve Fund.

"**Supplemental Trust Indenture**" means any resolution duly adopted by the SFPUC, supplementing, modifying or amending the Indenture in accordance with the provisions of the Indenture.

"**Swap Agreement**" means any financial instrument that: (a) is entered into by the SFPUC with a party that is a Qualified Counterparty at the time the instrument is entered into; (b) is entered into with respect to all or a portion of a Series of Bonds; (c) is for a term not extending beyond the final maturity of the Series of Bonds or portion thereof to which it relates; (d) provides that the SFPUC will pay to such Qualified Counterparty an amount accruing at either a fixed rate or a variable rate, as the case may be, on a notional amount equal to or less than the principal amount of the Series of Bonds or portion thereof to which it relates, and that such Qualified Counterparty will pay to the SFPUC an amount accruing at either a variable rate or fixed rate, as appropriate, on such notional amount; (e) provides that one party will pay to the other party any net amounts due under such instrument; and

(f) has been designated to the Trustee in the Supplemental Trust Indenture authorizing the issuance of the related Series of Bonds or portion thereof or in a Certificate of the SFPUC as a Swap Agreement with respect to such Bonds.

"**Swap Agreement Payments**" means the regularly scheduled net amounts required to be paid by the SFPUC to the Qualified Counterparty pursuant to a Swap Agreement.

"**Swap Agreement Receipts**" means the regularly scheduled net amounts required to be paid by a Qualified Counterparty to the SFPUC pursuant to a Swap Agreement.

"**Take-or-Pay Power Purchase Agreement**" means a contract (a) with a term of more than 5 years, (b) pursuant to which the SFPUC is obligated (i) to purchase capacity or energy from a generating facility, and (ii) to pay for such capacity or energy as an Operation and Maintenance Expense regardless of whether or not such capacity or energy is taken by or made available or delivered to the SFPUC, and (c) the payments pursuant to which are directly pledged and applied to pay and secure debt obligations issued to finance such generating facility.

"**Take-or-Pay Power Sales Contract**" means a contract (a) with a term of at least 5 years, (b) between the SFPUC and a purchaser of capacity or energy from the Power Enterprise, (c) whereby such purchaser is obligated to make fixed payments or payments based on a percentage of cost for such capacity or energy whether or not such capacity or energy is taken by or made available or delivered to such purchaser.

"**Tax Certificate**" means a Tax Certificate delivered by the SFPUC at the time of the issuance and delivery of Tax-Exempt Bonds or other applicable Series of Bonds, as the same may be amended or supplemented in accordance with its terms.

"**Tax-Exempt Bonds**" means Bonds, the interest on which in the opinion of Bond Counsel as of the date of issuance thereof is not includable in gross income for federal income tax purposes under Section 103(a) of the Code.

"**Term Bonds**" means Bonds that are subject to mandatory purchase or redemption prior to their scheduled maturity date or dates from Mandatory Sinking Fund Payments established for that purpose and calculated to retire such Bonds on or before their specified maturity date or dates.

"**Treasurer**" means the Treasurer of the City.

"**Trustee**" means U.S. Bank Trust Company, National Association, a national banking association, organized and existing under the laws of the United States of America, or any successor trustee under the Indenture.

"**Variable Rate Bonds**" means any Bonds the interest rate on which is not fixed to the scheduled maturity date or prior mandatory tender or redemption date, as of the date of calculation, at a single numerical rate for the entire remaining term to maturity or mandatory tender or redemption thereof.

"**Wastewater Enterprise**" means the municipal sanitary waste and storm water collection, treatment and disposal system, as located partially within and partially without the City, and all additions, betterments, and extensions to said sanitary waste and storm water system.

"**Water Enterprise**" means the municipal water supply, storage and distribution system of the SFPUC, as located partially within and partially without the City, including all of the presently existing municipal water system of the City, and all additions, betterments, and extensions to said water system, but excluding any water supply, storage or distribution facilities which constitute part of the Hetch Hetchy Project.

Issuance of Bonds; Subordinate Obligations

Authorization of Bonds. The maximum principal amount of Bonds that may be issued under the Indenture is not limited. The SFPUC may from time to time by Supplemental Trust Indenture authorize one or more Series of the Bonds, and the SFPUC may issue and the Trustee shall authenticate and deliver to the purchasers thereof any Bonds so authorized, in such principal amount as shall be determined by the SFPUC, but only upon compliance by the SFPUC with the provisions of the Indenture and any additional requirements set forth in such Supplemental Trust Indenture.

Conditions for the Issuance of Bonds. Each Series of Bonds shall be executed by the SFPUC and delivered to the Trustee and thereupon authenticated by the Trustee and delivered to the SFPUC or upon its order, but only (except with respect to Refunding Bonds) upon receipt by the Trustee of the following:

(a) A copy of the Indenture, including the Supplemental Trust Indenture authorizing the issuance of the Bonds of such Series;

(b) A written opinion of Bond Counsel to the effect that (i) such Series of Bonds are valid and binding limited obligations of the SFPUC enforceable against the SFPUC in accordance with their terms and (ii) the Indenture, including the Supplemental Trust Indenture authorizing the issuance of such Series of Bonds, is a valid and binding obligation of the SFPUC enforceable in accordance with its terms; provided, that such opinions may be qualified to the extent that the enforceability of the Bonds and the Indenture, including the Supplemental Trust Indenture authorizing the issuance of such Series of Bonds, may be limited by bankruptcy, insolvency, reorganization or similar laws affecting the enforcement of creditors' rights generally and by general equitable principles;

(c) An Order of the SFPUC as to the delivery of such Series of Bonds;

(d) A Certificate of the SFPUC stating that (i) no Event of Default, nor any event or condition which with notice and/or the passage of time would constitute an Event of Default, has occurred and is continuing under the Indenture as of the date of issuance of such Series of Bonds and (ii) the issuance of such Series of Bonds, in and of itself, will not cause an Event of Default under the Indenture;

(e) A Certificate of the SFPUC to the effect that provision has been made for the immediate deposit into the Reserve Account for such Series of Bonds of money, Authorized Investments, Reserve Account Credit Facility or Facilities or any combination of the foregoing in an aggregate amount equal to the Reserve Requirement, if any, for such Series of Bonds; and

(f) The document specified under the caption "Additional Bonds Certification" below.

Additional Bonds Certification. In connection with the issuance of a Series of Bonds, the requirements of paragraph (f) under the caption "Conditions for the Issuance of Bonds" above or of subparagraph (ii) of paragraph (b) under the caption "Conditions for the Issuance of Refunding Bonds" may be fulfilled by either:

(i) A Certificate of the SFPUC stating that, in each of the first three (3) full Fiscal Years after the sale of such Series of Bonds, projected Net Revenues: (A) plus Available Funds, are at least 1.25 times Annual Debt Service on the Outstanding Bonds, after giving effect to the issuance of such Series of Bonds, and (B) are at least 1.0 times Annual Debt Service on the Outstanding Bonds, plus required deposits into the Reserve Fund, after giving effect to the issuance of such Series of Bonds; or

(ii) A Certificate of the SFPUC stating that Net Revenues from any twelve consecutive months of the prior 24 months: (A) plus Available Funds, are at least 1.25 times Annual Debt Service on the Bonds Outstanding, after giving effect to the issuance of such Series of Bonds, and (B) are at least 1.0 times Annual Debt Service on the Bonds Outstanding, plus required deposits into the Reserve Fund after giving effect to the issuance of such Series of Bonds.

For purposes of the foregoing paragraph (ii) under this caption "Additional Bonds Certification," the following adjustments may be made to Net Revenues for such period, if so stated in the Certificate of the SFPUC:

(I) An allowance for additional Revenues anticipated from any additions, extensions and improvements to the Power Enterprise to be acquired or constructed from proceeds of such or a prior Series of Bonds and for any changes in Operation and Maintenance Expenses resulting therefrom, that are not reflected in Net Revenues for such Fiscal Year, but only if such additional Revenues and changes in

Operation and Maintenance Expenses represent a full twelve months' change in Net Revenues attributable to such additions, extensions and improvements; and

(II) An allowance for additional Revenues attributable to any increase in the rates and charges imposed by the SFPUC that (A) was in effect prior to the issuance of such Series of Bonds but which, during all or part of such Fiscal Year, was not in effect, or (B) was adopted by the SFPUC prior to the issuance of such Series of Bonds and will be in effect within 90 days after such issuance, but in either case only if such additional Revenues represent a full twelve months' change in Net Revenues attributable to such increase in rates and charges.

Conditions for Issuance of Refunding Bonds.

(a) A Series of Refunding Bonds may be issued by the SFPUC to provide funds sufficient for the payment of any or all of the following: (i) the Principal, Purchase Price or Redemption Price of the Bonds or Original Bonds to be refunded; (ii) all expenses incident to the purchase, call, redemption, retirement or payment of the Bonds or Original Bonds to be refunded; (iii) the costs of issuance of such Series of Refunding Bonds; (iv) interest on the Bonds or Original Bonds to be refunded to the date such Bonds or Original Bonds will be purchase, redeemed, retired or paid; (v) interest on such Series of Refunding Bonds from the date thereof to the date of purchase, redemption, retirement or payment of the Bonds or Original Bonds to be refunded; and (vi) any other lawful payment obligations, costs or expenses in connection with the issuance of the Refunding Bonds and the purchase, redemption, retirement or payment of the Bonds or Original Bonds to be refunded.

(b) A Series of Refunding Bonds may be issued by the SFPUC only upon receipt by the Trustee of the following:

(i) The documents specified in paragraphs (a), (b), (c) and (e) under the caption "Conditions for the Issuance of Bonds" above;

(ii) Either (A) the document specified under the caption "Additional Bonds Certification" above, or (B) a Certificate of the SFPUC stating that the issuance of such Series of Refunding Bonds will not result in any aggregate increase in Annual Debt Service for the Bonds greater than $100,000 in any Fiscal Year that such Series of Refunding Bonds is scheduled to be Outstanding;

(iii) If any of the Bonds or Original Bonds to be refunded are to be purchased or redeemed prior to their stated maturity dates, irrevocable instructions (A) to the Trustee to give the applicable notice of purchase or redemption of such Bonds or (B) to the trustee for the owners of such Original Bonds to give the applicable notice of purchase or redemption of such Original Bonds; and

(iv) An opinion of Bond Counsel that (A) all liability of the SFPUC in respect of the Bonds to be refunded has ceased, terminated and been discharged, pursuant to the terms of the Indenture and the Supplemental Trust Indenture pursuant to which such Bonds were issued, and the Owners of such Bonds are entitled to payment of the Principal, Purchase Price or Redemption Price of and interest on such Bonds only out of the money or securities deposited with the Trustee for the payment of such Bonds or (B) all liability of the SFPUC in respect of the Original Bonds to be refunded has ceased, terminated and been discharged, pursuant to the terms of the resolution or resolutions pursuant to which such Original Bonds were issued, and the owners of such Original Bonds are entitled to payment of the Principal, purchase price or redemption price of and interest on such Original Bonds only out of the money or securities deposited with the trustee for the owners of such Original Bonds for the payment of such Original Bonds.

Subordinate Obligations. Nothing in the Indenture shall prohibit the issuance by the SFPUC of Subordinate Obligations.

Revenue Fund; Pledge of Revenues

The Revenue Fund of the Power Enterprise established by the SFPUC and held by the Treasurer is continued under the Indenture for so long as any Bonds are Outstanding. Upon and after the issuance of any Bonds pursuant to the Indenture, the SFPUC covenants and agrees that it will pay into the Revenue Fund as received all

Revenues. The SFPUC further covenants and agrees that all Revenues shall be trust funds in the hands of the SFPUC and shall be used and applied as provided by the Indenture.

Under the Indenture, the SFPUC pledges and places a lien and charge upon the Revenues, after payment of Operation and Maintenance Expenses and any Priority R&R Fund Deposits, to secure the payment of the Bonds, and, to the extent permitted by law, Swap Agreement Payments and other payments due under Swap Agreements, in accordance with their respective terms without priority or distinction of one over the other, subject only to the provisions of the Indenture permitting the application of such Revenues for the purposes and on the terms and conditions set forth therein. The pledge of any lien and charge on the Revenues made under the Indenture shall be irrevocable until there are no Bonds Outstanding and until all Swap Agreement Payments and other payments due in accordance with the provisions of the Swap Agreements, if any, and the Indenture have been made.

The covenants and agreements set forth in the Indenture to be performed by or on behalf of the SFPUC shall be for the equal and proportionate benefit, security and protection of all Owners, without preference, priority or distinction as to security or otherwise of any Bond over any other Bond by reason of the Series, time of issue, sale or negotiation thereof or for any cause whatsoever, except as expressly provided therein or in the Indenture. Notwithstanding the foregoing, nothing in the Indenture shall prevent additional security being provided for a particular Series of Bonds under any Supplemental Trust Indenture.

Other Funds and Accounts

Bond Funds.

(a) There is created under the Indenture for each Series of Bonds a special fund of the SFPUC to be known as the "Power Enterprise Revenue Bonds, Series ____ Bond Fund" (each, a "Bond Fund"). Each Bond Fund and the accounts therein will be held and administered by the Trustee appointed as provided for in the Indenture, and will be used solely for the purpose of paying the Bonds and the Swap Agreement Payments of the related Series in the manner provided in the Indenture. The SFPUC obligates and binds itself irrevocably to set aside and to pay to the Trustee (to the extent not otherwise provided) out of the Revenues, after payment of Operation and Maintenance Expenses, in trust for the account of the Bond Fund, certain fixed amounts, without regard to any fixed proportion of the Revenues, after payment of Operation and Maintenance Expenses, sufficient to pay the Bonds and the Swap Agreement Payments of the related Series issued pursuant to the Indenture and the Supplemental Trust Indenture authorizing the issuance thereof and from time to time Outstanding as the same respectively become due and payable. Such fixed amounts to be paid to the Trustee and deposited into the related Bond Fund will be a charge and lien upon the Revenue Fund and payable therefrom as set forth in the Indenture.

(b) There is created under the Indenture an Interest Account in each Bond Fund. Promptly upon receipt thereof the Trustee will deposit in the Interest Account money received by the SFPUC as accrued interest on the Bonds of the related Series, and any Swap Agreement Receipts and Refundable Credits related to such Series of Bonds. The SFPUC will pay or cause to be paid to the Trustee for deposit into such Interest Account such amounts, taking into account amounts then on deposit in such Interest Account, as will be necessary to pay the interest on and any Swap Agreement Payments with respect to such Series of Bonds as the same will become due. The money in such Interest Account will be applied by the Trustee on the date upon which any such interest or payment is due and in amounts sufficient to pay such interest or payment.

(c) There is created under the Indenture a Capitalized Interest Account in each Bond Fund for each Series of Bonds for which a portion of the proceeds of sale of such Series of Bonds or other available moneys of the SFPUC, if any, are to be used for the purpose of paying interest on such Series of Bonds. Upon the issuance, sale and delivery of such Series of Bonds, the SFPUC will pay or cause to be paid to the Trustee for deposit into the Capitalized Interest Account for such Series of Bonds such portion of the proceeds of sale or such other available moneys, if any. Money in the Capitalized Interest Account for such Series of Bonds will be applied by the Trustee to the extent available for the purpose of paying interest on such Series of Bonds during the period specified in the Supplemental Trust Indenture authorizing the issuance thereof. On or before the date on which interest on such Series of Bonds becomes due and payable, the Trustee will transfer from the Capitalized Interest Account for such Series of Bonds to the Interest Account for such Series of Bonds an amount which, together with any money theretofore received or held by the Trustee for such purpose, will be sufficient to pay the interest on such Series or Bonds coming due on such date.

(d) There is created under the Indenture a Bond Retirement Account in each Bond Fund. The SFPUC will pay or cause to be paid to the Trustee for deposit into such Bond Retirement Account such amounts, taking into account amounts then on deposit in the Bond Retirement Account, as will be necessary to pay the Mandatory Sinking Fund Payments and Principal of such Series of Bonds as the same will become due. The money in such Bond Retirement Account will be applied by the Trustee on the date upon which any such Mandatory Sinking Fund Payments or Principal is due and in amounts sufficient to pay such Mandatory Sinking Fund Payments or Principal.

(e) Each Bond Fund will be drawn upon for the sole purpose of paying the Principal, Mandatory Sinking Fund Payments and Redemption Price of and interest on the Bonds of and the Swap Agreement Payments for the related Series. Money set aside from time to time with the Trustee for the payment of such Principal, Mandatory Sinking Fund Payments, Redemption Price, interest and Swap Agreement Payments will be held in trust equally and ratably for the Owners or Qualified Counterparties in respect of which the same will have been so set aside. Each Series of Bonds and the interest thereon will be a valid claim of the Owners thereof only against the Bond Fund for such Series of Bonds (and the Reserve Account for such Series of Bonds, if such Series of Bonds are secured by a Reserve Account) and the amount of the Revenues pledged to such Bond Fund (and, if applicable, such Reserve Account), and together with the related Swap Agreement Payments will constitute a prior charge over all other charges or claims whatsoever against the Bond Fund (and, if applicable, such Reserve Account) for such Series of Bonds.

(f) If at any time there will be insufficient money in the Revenue Fund to make the payments required to be made into the respective Bond Funds, the SFPUC will make payments to the Trustee for deposit into such Bond Funds in the same ratio as the Principal amount of each Series of Bonds then Outstanding bears to the aggregate Principal amount of all Series of Bonds then Outstanding. If in any month there is a failure for any reason to pay into any Bond Fund for credit to the Interest Account or the Bond Retirement Account the amounts prescribed above, the amount of any such deficiency will be added to the amount otherwise required to be paid into the Bond Fund for credit to the Interest Account or the Bond Retirement Account during the succeeding month or months.

(g) Whenever the assets of the Bond Fund for a Series of Bonds (together, if such Series of Bonds are secured by a Reserve Account, with the assets of such Reserve Account allocable to such Series of Bonds) will be sufficient to provide money to pay all Bonds of such Series then Outstanding, including such interest thereon as thereafter may become due and payable and any premiums upon redemption thereof, and all related Swap Agreement Payments, no further payments need be made into the Bond Fund or such Reserve Account for such Series of Bonds.

<u>Reserve Fund</u>.

(a) There is created under the Indenture a special fund of the SFPUC to be known as the "Power Enterprise Revenue Bonds Reserve Fund" (the "Reserve Fund"). The Reserve Fund and the Reserve Accounts therein shall be held and administered by the Trustee, and shall be used solely for the purpose of paying the Bonds and the Swap Agreement Payments secured by the Reserve Accounts in the manner provided in the Indenture.

(b) There is established in the Reserve Fund the Common Reserve Account, and there may be established one or more additional accounts in the Reserve Fund (each, a "Reserve Account"), each of which may secure one or more Series of Bonds pursuant to the Indenture and to the Supplemental Indenture authorizing the issuance thereof. The Trustee shall deposit in each Reserve Account proceeds of sale of each Series of Bonds to be secured thereby or other available money, Authorized Investments or a Reserve Account Credit Facility or Facilities, or any combination of the foregoing, in such amount as may be necessary to bring the amount on deposit therein to the Reserve Requirement for such Series of Bonds.

(c) Each Reserve Account shall thereafter be maintained at all times at the respective Reserve Requirement of the Bonds secured by such Reserve Account by additional deposits into such Reserve Account from the Revenue Fund after payment of Operation and Maintenance Expenses and required deposits into the Bond Funds, until such time as the Principal or Redemption Price of the Bonds secured by such Reserve Account, together with interest thereon to the date of retirement or redemption, can be paid from amounts in the Bond Fund or Funds established for such Bonds, together with amounts in such Reserve Account. Each Reserve Account shall be replenished in the following priority: first, to make all payments required under all reimbursement agreements with the providers of Reserve Account Credit Facilities credited to such Reserve Account (and if there is not sufficient money on deposit in such Reserve Account to make all such payments, then on a *pro rata* basis to each provider); and second, after all such payments are made in full, the amount necessary to make the money, Authorized Investments, and Reserve Account Credit Facility or Facilities or any combination of the foregoing deposited in or credited to such Reserve Account equal to the aggregate Reserve Requirements of the Bonds secured by such Reserve Account. If at any time there is not sufficient money to make all of the foregoing payments, such payments shall be made to the extent of available money into each Reserve Account in the same ratio as the Principal amount of the Outstanding Bonds secured thereby bears to the aggregate Principal amount of all Outstanding Bonds secured by the Reserve Fund.

(d) In the event of a deficiency in the Bond Fund for Bonds secured by a Reserve Account, the Trustee shall make up such deficiency from such Reserve Account in the following priority: first, by the withdrawal of cash held therein; second, by the sale or redemption of Authorized Investments held therein; and third, from draws upon the Reserve Account Credit Facility or Facilities credited thereto, if any, on a *pro rata* basis, in sufficient amounts to make up such deficiency. Such draws shall be made at such times and under such conditions as provided in such Reserve Account Credit Facility or Facilities.

(e) At the option of the SFPUC, amounts on deposit in a Reserve Account may be substituted at any time, in whole or in part, by the deposit with the Trustee of a Reserve Account Credit Facility or Facilities in a stated amount equal to the amounts so substituted. Any amounts released from a Reserve Account as a result of such substitution shall be applied for any lawful purpose of the Power Enterprise as provided in an Order of the SFPUC.

(f) Each Reserve Account may be drawn upon for the sole purpose of paying the Principal, Mandatory Sinking Fund Payments and Redemption Price of and interest on the Bonds and the Swap Agreement Payments relating to the Bonds secured by such Reserve Account, provided, that excess amounts in any Reserve Account may be withdrawn therefrom upon a written request to the Trustee by the SFPUC and applied to any lawful purposes of the Power Enterprise. Money set aside from time to time with the Trustee for the payment of such Principal, Mandatory Sinking Fund Payments, Redemption Price, interest and Swap Agreement Payments shall be held in trust equally and ratably for the Owners or Qualified Counterparties in respect of which the same shall have been so set aside.

Upon the issuance of each Series of Bonds the SFPUC must either designate such Series as a Common Reserve Series to be secured by the Common Reserve Account or establish the Reserve Requirement for such Series, if any. **As provided in the Third Supplemental Trust Indenture, the 2023A Bonds shall not be a Common Reserve Series, shall not be secured by a Reserve Account and the Reserve Requirement for the 2023A Bonds shall be $0.**

Project Funds. There is created under the Indenture for each Series of Bonds a special fund of the SFPUC to be known as the "Power Revenue Bonds, Series ____ Project Fund" (each, a "Project Fund"). Each Project Fund will be held by the Treasurer and administered by the SFPUC. Immediately upon the issuance, sale and delivery of a Series of the Bonds, the SFPUC will pay or cause to be paid into the Project Fund for such Series such amount of the proceeds derived from the sale of such Series of Bonds as will be designated pursuant to the Supplemental Trust Indenture authorizing the issuance thereof. Money so deposited in the Project Fund will be applied to the costs of issuance of such Series of Bonds and to the costs of acquiring, and constructing the additions, betterments and improvements to, and repairs, renewals and replacements of the Power Enterprise or other lawful purposes of the Power Enterprise to be funded out of the proceeds of such Series of Bonds.

Each payment by the SFPUC from the Project Fund will constitute the representation of the SFPUC that (a) an obligation in such amount has been incurred by the SFPUC, (b) such obligation is a proper and reasonable charge against such Project Fund, (c) such amount has not been theretofore paid, (d) insofar as any such obligation was incurred for work, materials, equipment or supplies, such work was actually performed, or such materials, equipment or supplies were actually installed or delivered, or such amount is a progress payment due thereon and (e) there has not been filed with or served upon the SFPUC any notice of any lien, right to lien, or attachment upon or claim affecting the right to receive payment of such amount that has not been released or will not be released simultaneously with the payment of such amount.

Reconstruction and Replacement Fund. There is created under the Indenture a special fund of the SFPUC to be known as the "Power Enterprise Reconstruction and Replacement Fund," to be held by the Treasurer and administered by the SFPUC. The SFPUC covenants and agrees to deposit and maintain in the Reconstruction and Replacement Fund such amount so that the balance therein shall be at least equal to the amount, if any, required to be on deposit therein pursuant to the Charter. Amounts in the Reconstruction and Replacement Fund shall be applied to pay costs for reconstruction and replacements of the properties constituting a part of the Power Enterprise due to physical and functional depreciation.

Rebate Funds. Unless otherwise provided pursuant to a Supplemental Trust Indenture, there is established under the Indenture a Rebate Fund for each Series of Tax-Exempt Bonds to be held by the Treasurer and administered by the SFPUC as set forth in the Indenture. The SFPUC will maintain each Rebate Fund until the expiration of 60 days after the retirement of such Series of Tax-Exempt Bonds. Within 30 days after the end of each Computation Period, the SFPUC will determine or cause to be determined the Rebate Amount attributable to each Rebate Fund for such Computation Period. Subject to the provisions of the Indenture, the SFPUC will transfer from the Revenue Fund into the Rebate Fund money to the extent required to provide for any Rebate Amount the SFPUC has determined to exist.

Investment or Deposit of Funds

Deposits and Security. All money received by the Trustee under the Indenture for deposit in the Funds will be considered trust funds pending their application as provided in the Indenture and will be subject to a prior and paramount pledge, lien and charge in favor of the Owners of the Series of Bonds and Qualified Counterparties payable from or secured by each such Fund, and for the further security of such Series of Bonds until paid out or transferred as provided in the Indenture. All money on deposit with the Trustee will be secured in the manner required by State or other applicable law. All security for deposits will be perfected in such manner as may be required or permitted under applicable law in order to provide to the Trustee a perfected lien on and security interest in such security.

Investment or Deposit of Funds.

(a) All money on deposit in the Funds will be invested and reinvested by the Trustee or the Treasurer, as the case may be, in Authorized Investments that mature, or are subject to repurchase, withdrawal without penalty or redemption at the option of the holder on or before the dates on which the amounts invested are reasonably expected to be needed for the purposes of the Indenture.

(b) All purchases or sales of Authorized Investments made by the Trustee will be made at the direction of the SFPUC (given in writing or orally, confirmed in writing). In the absence of such direction, the Trustee will invest all money on deposit in the Funds held by the Trustee in money market funds comprised or full secured by Government Securities.

(c) Any Authorized Investments held by the Trustee may be transferred by the Trustee, if required in writing by the SFPUC, from any of the Funds to any other Fund at the then current market value thereof without having to be sold and purchased or repurchased; provided, that after any such transfer or transfers, the Authorized Investments in each such Fund will be in accordance with the provisions of the Indenture, and whenever any other transfer or payment is required to be made from any particular Fund, such transfer or payment will be made from such combination of maturing principal, redemption premiums, liquidation proceeds and withdrawals of principal as the Trustee deems appropriate for such purpose.

(d) The Trustee will not be accountable for any depreciation in the value of Authorized Investments or for any losses incurred upon any authorized disposition thereof.

(e) Subject to the foregoing, the Trustee is expressly authorized to invest money in two or more Funds in a single investment; provided, that the portion of the investment allocable to each such Fund, and all payments received with respect to such allocable portion, will be applied in accordance with the applicable provisions governing such Fund under the Indenture.

Valuation of Funds. The Trustee will determine the market value of the Authorized Investments in each of the Funds held by the Trustee as of (a) June 30 of each year (or if such day is not a Business Day, the preceding Business Day) and (b) the date of issuance of each Series of Bonds. As soon as practicable after each such valuation date, the Trustee will furnish to the SFPUC a report of the status of each Fund held by the Trustee as of such date. In computing the value of Authorized Investments in any Fund, Authorized Investments will be valued at the fair market value thereof; provided, that investments in any Reserve Account will be valued at cost plus accreted value.

Covenants of the Commission

Among other covenants, the SFPUC covenants and agrees with the Owners from time to time of the Bonds issued pursuant to the Indenture as follows:

Operation and Maintenance of the Power Enterprise. Subject to the other provisions of the Indenture, the SFPUC will at all times operate the Power Enterprise and the business in connection therewith in an efficient manner and at reasonable cost, and shall maintain, preserve and keep, or cause to be maintained, preserved and kept, the properties and facilities constituting any part of the Power Enterprise, and all additions and betterments thereto and extensions thereof, and every part and parcel thereof, in good repair, working order and condition, and shall from time to time make, or cause to be made, all necessary and proper repairs, renewals, replacements, additions, extensions and betterments thereto, so that at all times the business carried on in connection therewith shall be properly and advantageously conducted.

Sufficiency of Revenues.

(a) The Revenues in each Fiscal Year shall be sufficient:

(i) To pay, to the extent not paid from other available moneys, (A) the Operation and Maintenance Expenses during such Fiscal Year, (B) Annual Debt Service on the Bonds due and payable in such Fiscal Year, (C) the amounts, if any, required to be deposited into the Reserve Fund during such Fiscal Year and (D) any and all other amounts the SFPUC is obligated to pay or set aside from the Revenues by law or contract in such Fiscal Year;

(ii) To maintain a Bond Coverage Ratio of at least 1.0 to 1.0; and

(iii) Together with Available Funds, to maintain a Bond Coverage Ratio of at least 1.25 to 1.00.

(b) The failure of the SFPUC to maintain the Bond Coverage Ratios in any Fiscal Year shall not constitute a default in the observance of the covenants if:

(i) within 60 days after the SFPUC first determines that the Bond Coverage Ratio was not met or 60 days after the SFPUC's receipt of audited financial statements showing that the Bond Coverage Ratio was not met (whichever is earlier), the SFPUC engages a Consulting Engineer to deliver a report to the SFPUC within 60 days after such engagement which includes recommendations as to how the SFPUC can increase Revenues and/or reduce Operation and Maintenance Expenses so as to satisfy the Bond Coverage Ratios; and

(ii) (A) within 120 days after receipt of the Consulting Engineer's report the SFPUC implements the recommendations set forth in such report; or (B) the report states that the Power Enterprise cannot generate Revenues and/or reduce Operation and Maintenance Expenses sufficient to enable the SFPUC to maintain the Bond Coverage Ratios while satisfying the other covenants set forth in the Indenture, and the SFPUC increases its Revenues and/or reduces its Operation and Maintenance Expenses to the extent otherwise recommended in such report; or (C) the SFPUC is prevented from taking any such action by order of any court of competent jurisdiction. Notwithstanding the foregoing, failure for two (2) consecutive Fiscal Years to maintain the Bond Coverage Ratios shall in all events constitute an Event of Default.

Rates and Charges. The SFPUC will fix, establish, maintain and collect rates and charges for electric power and energy and other services, facilities and commodities sold, furnished or supplied through the facilities of the Power Enterprise, which shall be fair and nondiscriminatory and adequate to provide the SFPUC with Revenues sufficient to satisfy the covenants set forth in paragraph (a) under the caption "Sufficiency of Revenues" above (without giving effect to the provisions of paragraph (b) under such caption); provided, that anything in the Indenture to the contrary notwithstanding, the SFPUC shall not be required to impose rates and charges in violation of (i) applicable provisions of the Raker Act of 1913 or any successor statute; (ii) any other applicable federal or state statutes or regulations; or (iii) any current or future contract or agreement between (A) any City enterprise department, agency or commission, and (B) its customers, tenants or users.

Protection of Security. The Revenues pledged under the Indenture are and shall be free and clear of any pledge, lien, charge or encumbrance thereon or with respect thereto prior to, or of equal rank with, the pledge created by the Indenture, except as otherwise expressly provided therein. The Bonds and the Indenture are and will be valid and binding obligations of the SFPUC enforceable in accordance with their terms and the terms of the Indenture; provided, that the rights of the Owners under the Indenture and under the Bonds may be subject to the exercise of judicial discretion, to bankruptcy, insolvency, reorganization, moratorium and other laws for the relief of debtors, and to limitations on remedies against cities and their departments and commissions under the laws of the State. The SFPUC will at all times, to the extent permitted by law, defend, preserve and protect the pledge of the Revenues and the rights of the Owners under the Indenture against all claims and demands of all persons whatsoever.

Take-or-Pay Power Sales Contracts. So long as any Take-or-Pay Power Sales Contract is in effect, the SFPUC will enforce the provisions of such Take-or-Pay Power Sales Contract and will not waive any right or fail to declare any default under or in connection with such Take-or-Pay Power Sales Contract that would reduce the payments provided therein or would materially adversely affect the security of the Owners; provided, that the SFPUC may, in the event the purchaser under such Take-or-Pay Power Sales Contract fails or refuses to take power and energy pursuant to such Take-or-Pay Power Sales Contract or to make payment therefor, sell such power and energy to others.

Take-or-Pay Power Purchase Agreements. The SFPUC will not hereafter enter into any Take-or-Pay Power Purchase Agreement payable from Revenues as an Operation and Maintenance Expense unless the SFPUC will first deliver to the Trustee a Certificate of the SFPUC demonstrating compliance with the requirements set forth in the Indenture for the first three (3) full Fiscal Years following the Fiscal Year in which such Take-or-Pay Power Purchase Agreement will become effective.

Not to Dispose of Power Enterprise Properties. The SFPUC will not sell, lease or otherwise dispose of, or cause the sale, lease or other disposition of or permit to be sold, leased or otherwise disposed of any real or personal properties constituting part of the Power Enterprise unless:

(a) Such sale, lease or disposal is of properties that in the judgment of the SFPUC have become unserviceable, inadequate, obsolete, unfit or no longer needed for the efficient and economical operation of the Power Enterprise; or

(b) Such sale, lease or disposal will not materially impair the ability of the SFPUC to comply with the provisions of the Indenture for a period of three Fiscal Years after such sale, lease or disposal, as set forth in a certificate of the SFPUC; or

(c) The SFPUC applies the proceeds of such sale, lease or disposal to redeem or defease the Outstanding Bonds on a pro rata basis across all maturities thereof.

The foregoing will not preclude the SFPUC from providing a security or leasehold interest in property to secure obligations for borrowed money entered into to finance the acquisition or construction of such properties.

Insurance.

(a) The SFPUC will maintain property, liability and other insurance with respect to the business, operations, works, plants and facilities of the Power Enterprise, to the extent available at a reasonable cost from responsible insurers, with policies payable to the SFPUC for the benefit of the Power Enterprise, in such amounts and against such risks as are typically carried by similar municipally-owned electric utilities; provided, that the SFPUC will not be required to carry insurance for losses to the Power Enterprise caused by earthquake.

(b) In the event of any loss or damage to the properties or facilities of the Power Enterprise covered by insurance exceeding in any Fiscal Year 5% of the net book value of the capital assets of the Power Enterprise, the SFPUC will apply the proceeds received by the SFPUC of any insurance policy or policies covering such damage or loss for the purposes of (i) repairing or replacing such properties or facilities; (ii) acquiring or constructing other properties or facilities; and/or (iii) to pay, redeem or defease Outstanding Bonds of such maturity or maturities as the SFPUC will determine in its discretion.

(c) The SFPUC may provide any insurance coverage otherwise required by (a) through a self-insurance program.

Eminent Domain. In the event of transfer of the properties of the Power Enterprise by operation of law or under threat of condemnation, the SFPUC will apply the proceeds received by the SFPUC of any such condemnation award or any such sale under threat of condemnation for the purpose of replacing or restoring such properties of the Power Enterprise, or to defease the Outstanding Bonds on a pro rata basis across all maturities thereof.

Economically Sound Improvements. The SFPUC will undertake any additions, betterments or improvements to the Power Enterprise in a sound and economical manner and in accordance with applicable law.

Payment of Bonds. The SFPUC will duly and punctually pay or cause to be paid, but only from the Revenues and other available moneys, the Bonds on the dates and in the manner provided in the Indenture and in the Bonds, and will faithfully do and perform and fully observe and keep any and all covenants, undertakings, stipulations and provisions contained in the Bonds and in the Indenture and the Supplemental Trust Indentures.

Payment of Taxes and Claims. The SFPUC will from time to time duly pay and discharge, or cause to be paid and discharged, all taxes, assessments and other governmental charges, or required payments in lieu thereof, lawfully imposed upon the properties constituting part of the Power Enterprise or on the Revenues when the same will become due, and all lawful claims for labor and material and supplies which, if not paid, might become a lien or charge upon such properties, or any part thereof, or upon the Revenues, or which might in any material way impair the security for the Bonds; provided, that the SFPUC will not be required to pay any such taxes, assessments, charges or claims which the SFPUC will in good faith contest by proper legal proceedings.

Tax Covenants. Except as provided in a Supplemental Trust Indenture with respect to a Series of Bonds the interest on which is not intended to be exempt from Federal income tax:

(a) The SFPUC will not take any action, or fail to take any action, if any such action or failure to take action would adversely affect the exclusion from gross income of interest on the Bonds under Section 103 of the Code. The SFPUC will not, directly or indirectly, use or permit the use of proceeds of the Bonds or any of the property financed or refinanced with proceeds of the Bonds, or any portion thereof, by any person other than a governmental unit (as such term is used in Section 141 of the Code), in such manner or to such extent as would result in the loss of exclusion from gross income for federal income tax purposes of interest on the Bonds.

(b) The SFPUC will not take any action, or fail to take any action, if any such action or failure to take action would cause the Bonds to be "private activity bonds" within the meaning of Section 141 of the Code, and in furtherance thereof, will not make any use of the proceeds of the Bonds or any of the property financed or refinanced with proceeds of the Bonds, or any portion thereof, or any other funds of the SFPUC, that would cause the Bonds to be "private activity bonds" within the meaning of Section 141 of the Code. To that end, so long as any Bonds are Outstanding, the SFPUC, with respect to such proceeds and property and such other funds, will comply with applicable requirements of the Code and all regulations of the United States Department of the Treasury issued thereunder, to the extent such requirements are, at the time, applicable and in effect. The SFPUC will establish reasonable procedures necessary to ensure continued compliance with Section 141 of the Code and the continued qualification of the Bonds as "governmental bonds."

(c) The SFPUC will not, directly or indirectly, use or permit the use of any proceeds of any Bonds, or of any property financed or refinanced thereby, or take or omit to take any action, that would cause the Bonds to be "arbitrage bonds" within the meaning of Section 148 of the Code.

(d) The SFPUC will not make any use of the proceeds of the Bonds, or take or omit to take any other action, that would cause the Bonds to be "federally guaranteed" within the meaning of Section 149(b) of the Code.

Further Assurances. The SFPUC will at any and all times, insofar as it may be authorized to do so by law, pass, make, do, execute, acknowledge and deliver all and every such further resolutions, acts, assignments, instruments and assurances as may be necessary or desirable for the better assuring, granting, pledging, assigning and confirming any and all of the rights, revenues, funds and other property hereby granted, pledged or assigned to pay or secure the payment of the Bonds, in the manner and to the extent provided in the Indenture.

Covenant to Defease or Retire Bonds Upon Acquisition of PG&E Assets. In the event that the City shall hereafter purchase or otherwise acquire all or a substantial portion of the electric distribution and transmission assets of Pacific Gas & Electric Company needed to provide retail electric service to all electricity customers within the geographic boundaries of the City, the SFPUC will either operate such service as a Separate System or provide for all then Outstanding Bonds to be defeased or retired pursuant to applicable provisions of the Indenture. In connection with any such purchase or other acquisition, the SFPUC shall not elect to operate such service as a Separate System unless the SFPUC has determined that such operation will not have a material adverse effect on the holders of, or the security pledged for the payment of, the Bonds.

Defaults and Remedies

Events of Default. Each of the following is an "Event of Default" under the Indenture:

(a) The SFPUC will default in the payment of any Principal, Purchase Price or Redemption Price of or interest on any Bond when the same becomes due and payable; or

(b) Subject to the provisions of the Indenture, default in the performance, or breach, of any covenant, warranty or representation of the SFPUC contained in the Indenture (other than a default under (a) above); or

(c) (i) The filing of a petition in bankruptcy (or other commencement of a bankruptcy or similar proceedings) by the SFPUC or the City as debtor, under federal or state bankruptcy law; (ii) the filing of a petition in bankruptcy (or other commencement of a bankruptcy or similar proceedings) against the SFPUC or the City as debtor, under federal or state bankruptcy law, which petition is not dismissed within 60 days after filing; (iii) the appointment of a receiver, liquidator, assignee, custodian, trustee, sequestrator or other similar official of the SFPUC or the City or of any substantial portion of its property; or (iv) the ordering of the winding up or liquidation of the affairs of the SFPUC or the City.

Remedies Upon Default.

(a) If an Event of Default under the caption "Events of Default" occurs and is continuing, the Trustee may, and upon the written request to the Trustee by the Owners of a majority in aggregate Principal amount of the Outstanding Bonds the Trustee will, subject to the requirements under the caption "Certain Rights of the Trustee," by written notice to the SFPUC, declare the Principal of the Bonds and all interest accrued thereon to the date of acceleration to be immediately due and payable.

(b) At any time after such a declaration of acceleration has been made and before the entry of a judgment or decree for payment of the money due, the Trustee may, or the Owners of a majority in aggregate Principal amount of the Outstanding Bonds, may by written notice to the SFPUC and the Trustee, and subject to the requirements under the caption "Certain Rights of the Trustee," direct the Trustee to, rescind and annul such declaration and its consequences if:

(i) there has been paid to or deposited with the Trustee by or for the account of the SFPUC, or provision satisfactory to the Trustee has been made for the payment of a sum sufficient to pay: (A) all overdue installments of interest on the Bonds; (B) the Principal, Purchase Price, and Redemption Price of any Bonds that have become due other than by such declaration of acceleration and interest thereon; (C) to the extent lawful, interest upon overdue interest and redemption premium, if any; and (D) all sums paid or advanced by the Trustee under the Indenture, together with the reasonable compensation, expenses, disbursements and advances of the Trustee and its agents and counsel prior to the date of notice of rescission; and

(ii) all Events of Default have been cured or waived, other than the nonpayment of Principal, Purchase Price or Redemption Price of and interest on the Bonds that occasioned such acceleration.

(c) No such rescission and annulment will affect any subsequent default or impair any consequent right.

Additional Remedies.

(a) The Trustee, upon the occurrence of an Event of Default may, and upon the written request of the Owners of a majority in aggregate Principal amount of the Outstanding Bonds, and subject to the requirements under the caption "Certain Rights of the Trustee," will proceed to protect and enforce its rights and the rights of the Owners of the Bonds under the Indenture by a suit or suits in equity or at law, either for the specific performance of any covenant or agreement contained in the Indenture or in aid of the execution of any power therein granted, or for the enforcement of any other appropriate legal or equitable remedy, and the Trustee in reliance upon the advice of counsel may deem most effective to protect and enforce any of the rights or interests of the Owners of the Bonds under the Bonds or the Indenture.

(b) Without limiting the generality of the foregoing, the Trustee will at all times have the power to institute and maintain such proceedings as it may deem expedient: (i) to prevent any impairment of the money and other property then held under the Indenture by any acts that may be unlawful or in violation of the Indenture, and (ii) to protect its interests and the interests of the Owners in the money and other property then held under the Indenture and in the issues, profits, revenues and other income arising therefrom, including the power to maintain proceedings to restrain the enforcement of or compliance with any governmental enactment, rule or order that may be unconstitutional or otherwise invalid, if the enforcement of or compliance with, such enactment, rule or order would impair the money and other property then held under the Indenture or be prejudicial to the interests of the Owners or the Trustee.

Marshaling of Assets. Upon the occurrence of an Event of Default, all money in all Funds will be available to be utilized by the Trustee in accordance with the provisions under the caption "Events of Default." The rights of the Trustee under the caption "Compensation and Expenses of the Trustee," will be applicable. During the continuance of any such Event of Default, all provisions of the Indenture relating to the utilization of the Funds will be superseded by the provisions under the caption "Events of Default." Subsequent to the curing or waiver of any such Event of Default, the provisions of the Indenture relating to utilization of the Funds will be reinstated.

Trustee May File Proofs of Claim.

(a) In case of the pendency of any receivership, insolvency, liquidation, bankruptcy, reorganization, arrangement, adjustment, composition or other judicial proceeding under the federal bankruptcy code relating to the SFPUC, any other obligor upon the Bonds or any property of the SFPUC, the Trustee (whether or not the Principal of the Bonds are then due and payable by acceleration or otherwise, and whether or not the Trustee has made any demand upon the SFPUC for the payment of overdue Principal, Purchase Price, Redemption Price and interest) will be entitled and empowered, by intervention in such proceeding or other means: (i) to file and prove a claim for the whole amount of the Principal, Purchase Price, Redemption Price and interest owing and unpaid in respect of the Bonds then Outstanding or for breach of the Indenture and to file such other papers or documents as may be necessary or advisable in order to have the claims of the Trustee (including any claim for the reasonable compensation, expenses, disbursements and advances of the Trustee and its agents and counsel) and of the Owners allowed in such proceeding; and (ii) to collect and receive any money or other property payable or deliverable on any such claims and to distribute the same; and each Owner, by holding the Bonds, thereby authorizes any receiver, assignee, trustee, liquidator, sequestrator or similar official in any such judicial proceeding to make such payments to the Trustee, and, in the event that the Trustee will consent to the making of such payments directly to the Owners, to pay to the Trustee any amount due it for the reasonable compensation, expenses, disbursements and advances of the Trustee and its agents and counsel, and any other amounts due the Trustee under the Indenture.

(b) No provision of the Indenture empowers the Trustee to authorize or consent to or accept or adopt on behalf of any Owners any plan of reorganization, arrangement, adjustment or composition affecting any of the Bonds or the rights of any Owner, or to authorize the Trustee to vote in respect of the claim of any Owner in any proceeding described in the Indenture.

Possession of Bonds Not Required. All rights under the Indenture and the Bonds may be enforced by the Trustee without possession of any Bonds or the production of them at trial or other proceedings. Any proceedings instituted by the Trustee may be brought in its name for itself or as representative of the Owners without the necessity of joining Owners as parties, and any recovery resulting from such proceedings will, subject to the Indenture, be for the ratable benefit of the Owners.

Notice and Opportunity to Cure Certain Defaults. No default in (b) under the caption "Events of Default," will constitute an Event of Default until written notice of such default will have been given to the SFPUC by the Trustee or by the Owners of at least 25% in aggregate Principal amount of the Bonds Outstanding, and the SFPUC will have had 60 days after receipt of such notice to correct such default or cause such default to be corrected, and will have failed to do so. In the event, however, that the default is such that it cannot be corrected within such 60-day period, it will not constitute an Event of Default if corrective action is instituted by the SFPUC within such period and diligently pursued (as determined by the Trustee) until the default is corrected.

Priority of Payment Following Event of Default.

(a) If at any time after the occurrence of an Event of Default the money held by the Trustee under the Indenture will not be sufficient to pay the Bonds as the same become due and payable, such money, together with any money then available or thereafter becoming available for such purpose, whether through the exercise of remedies in the provisions described under this section "Defaults and Remedies" or otherwise, will, subject to the provisions described under paragraphs (b) and (c) below under this caption "Priority of Payment Following Event of Default," be applied by the Trustee as follows:

(i) First, to the payment of all amounts due the Trustee under the caption "Compensation and Expenses of the Trustee";

(ii) Second, to the payment of Operation and Maintenance Expenses;

(iii) Third, to the payment of all interest on the Bonds and Swap Agreement Payments then due and payable in the order in which the same became due and payable, and, if the amount available will not be sufficient to make any payment in full, then to the payment, ratably, according to the amounts due with respect to such payments, without discrimination or preference;

(iv) Fourth, to the payment of the unpaid Principal amount of any of the Bonds that will have become due and payable, in the order of due dates (other than Bonds called for redemption or contracted to be purchased for the payment of which money is held pursuant to the provisions of the Indenture), with interest upon the Principal amount of the Bonds from the respective dates upon which they will have become due and payable, and, if the amount available will not be sufficient to pay in full the Principal of such Bonds due and payable on any particular due date, together with such interest, then to the payment first of such interest, ratably, according to the amount of Principal due on such date, without any discrimination or preference;

(v) Fifth, to the payment of the Redemption Price of Bonds called for optional redemption, if any;

(vi) Sixth, to the payment under all reimbursement agreements with the providers of Reserve Account Credit Facilities of all amounts due and payable thereunder (and if there is not sufficient money to make all such payments, then on a *pro rata* basis to each provider);

(vii) Seventh, (A) for the payment of principal and premium, if any, and interest on Subordinate Obligations; (B) for deposit into a reserve fund securing any Subordinate Obligations; (C) for Swap Agreement Payments pursuant to any Swap Agreements entered into by the SFPUC with respect to any Subordinate Obligations; and (D) for payment to any financial institution or insurance company providing any letter of credit, line of credit, or other credit or liquidity facility, including municipal bond insurance and guarantees, that secures the payment of principal of or interest on any Subordinate Obligations; in each case in any order of priority which may be hereafter established by the SFPUC;

(viii) Eighth, for any payment under a Take-or-Pay Power Purchase Agreement that does not constitute an Operation and Maintenance Expense;

(ix) Ninth, for any payment under a Swap Agreement that does not constitute a Swap Agreement Payment; and

(x) Tenth, to the payment of all other charges or obligations against the Revenues of whatever nature now or hereafter imposed thereon by law or contract, in any order of priority which may be hereafter established by the SFPUC.

(b) If the Principal of all Bonds shall have become due and payable, subject to the provisions described in clause (i) of paragraph (a) under this caption "Priority of Payment Following Event of Default" above, regarding payment to the Trustee, all such money will be applied to the payment of the Principal and interest then due and unpaid upon the Bonds, without preference or priority of Principal over interest or of interest over Principal, or of any installment of interest over any other installment of interest, or of any Bond over any other Bond, ratably, according to the amounts due respectively for Principal and interest, without any discrimination or preference.

(c) Whenever money is to be applied pursuant to the provisions described under this caption "Priority of Payment Following Event of Default," the Trustee may, in its discretion, establish and maintain a reserve for future fees and expenses, and may apply money to be distributed at such times, and from time to time, as the Trustee will determine, having due regard for the amount of such money available for application and the likelihood of additional money becoming available for such application in the future. Whenever the Trustee will apply such funds, it will fix a date (which will be an interest payment date unless it will deem another date more suitable) upon which such application is to be made and upon such date interest on the amounts of Principal to be paid on such dates, and for which money is available, will cease to accrue. The Trustee will also select a record date for such payment date The Trustee will give such notice as it may deem appropriate of the deposit with it of any money and of the fixing of any such record date and payment date, and will not be required to make payment to the Owner of any Bond until such Bond will be presented to the Trustee for appropriate endorsement or for cancellation if fully paid.

Owners May Direct Proceedings. The Owners of a majority in aggregate Principal amount of the Outstanding Bonds will, subject to the requirements described in clause (e) under the caption "Certain Rights of the Trustee," have the right, by an instrument or instruments in writing executed and delivered to the Trustee, to direct the method and place of conducting all remedial proceedings by the Trustee under the Indenture, provided that such direction will not be in conflict with any rule of law or the Indenture and that the Trustee will have the right to decline to follow any such direction which in the opinion of the Trustee would be unduly prejudicial to the rights of Owners not parties to such direction or would subject the Trustee to personal liability or expense. Notwithstanding the foregoing, the Trustee will have the right to select and retain counsel of its choosing to represent it in any such proceedings. The Trustee may take any other action which is not inconsistent with any direction given as described in this paragraph.

Limitations on Rights of Owners.

(a) No Owner will have any right to pursue any other remedy under the Indenture or the Bonds unless: (i) an Event of Default will have occurred and is continuing; (ii) the Owners of a majority in aggregate Principal amount of the Outstanding Bonds have requested the Trustee, in writing, to exercise the powers granted in the Indenture or to pursue such remedy in its or their name or names; (iii) the Trustee has been offered indemnity satisfactory to it against costs, expenses and liabilities reasonably anticipated to be incurred; (iv) the Trustee has declined to comply with such request, or has failed to do so, within 60 days after its receipt of such written request and offer of indemnity; and (v) no direction inconsistent with such request has been given to the Trustee during such 60-day period by the Owners of a majority in aggregate Principal amount of the Outstanding Bonds.

(b) The provisions described in paragraph (a) under this caption "Limitations on Rights of Owners" are conditions precedent to the exercise by any Owner of any remedy under the Indenture. The exercise of such rights is further subject to the provisions under the captions "Owners May Direct Proceedings," "Unconditional Rights of Owners to Receive Payment" and "Delay or Omission Not Waiver." No one or more Owners will have any right in any manner whatever to enforce any right under the Indenture, except in the manner therein provided.

All proceedings at law or in equity with respect to an Event of Default will be instituted and maintained in the manner provided in the Indenture for the equal and ratable benefit of the Owners of all Bonds Outstanding.

Unconditional Rights of Owners To Receive Payment. Notwithstanding any other provision of the Indenture, the Owner of each Bond will have the absolute and unconditional right to receive payment of Principal, Purchase Price and Redemption Price of and interest on such Bond on and after the due date thereof, and to institute suit for the enforcement of any such payment.

Restoration of Rights and Remedies. If the Trustee or any Owner has instituted any proceeding to enforce any right or remedy under the Indenture, and any such proceeding has been discontinued or abandoned for any reason, or has been determined adversely to the Trustee or such Owner, then the SFPUC, the Trustee and the Owners will, subject to any determination in such proceeding, be restored to their former positions under the Indenture, and all rights and remedies of the Trustee and the Owners will continue as though no such proceeding had been instituted.

Rights and Remedies Cumulative. No right or remedy conferred upon or reserved to the Trustee is intended to be exclusive of any other right or remedy, but each such right or remedy will, to the extent permitted by law, be cumulative of and in addition to every other right or remedy given under the Indenture or now or hereafter existing at law, in equity or otherwise. The assertion or employment of any right or remedy under the Indenture will not prevent the concurrent assertion or employment of any other appropriate right or remedy.

Delay or Omission Not Waiver. No delay or omission by the Trustee or any Owner to exercise any right or remedy accruing upon any Event of Default will impair any such right or remedy or constitute a waiver of such Event of Default. Every right and remedy given by the provisions under the caption "Events of Default" or by law to the Trustee or the Owners may be exercised from time to time, and as often as may as deemed expedient, by the Trustee or the Owners, as the case may be.

Waiver of Defaults.

(a) The Owners of a majority in aggregate Principal amount of the Outstanding Bonds may, by written notice to the Trustee and subject to the requirements of (e) under the caption "Certain Rights of the Trustee," waive any existing default or Event of Default and its consequences, except an Event of Default under (a) under the caption "Events of Default." Upon any such waiver, the default or Event of Default will be deemed cured and will cease to exist for all purposes. No waiver of any default or Event of Default will extend to or effect any subsequent default or Event of Default or will impair any right or remedy consequent thereto.

(b) Notwithstanding any provision of the Indenture, in no event will any Person, other than all of the affected Owners, have the ability to waive any Event of Default under the Indenture if such event results or may result, in the opinion of Bond Counsel, in interest on any of the Tax-Exempt Bonds becoming includable in gross income for federal income tax purposes.

Notice of Events of Default. If an Event of Default occurs of which the Trustee has or is deemed to have notice under (h) under the caption "Certain Rights of the Trustee," the Trustee will give prompt notice thereof to the SFPUC. Within 30 days thereafter (unless such Event of Default has been cured or waived), the Trustee will give notice of such Event of Default to each Owner of Bonds then Outstanding; provided, that except in the instance of an Event of Default under (a) under the caption "Events of Default," the Trustee may withhold such notice to Owners if and so long as the Trustee in good faith determines that the withholding of such notice is in the interests of Owners; and provided further, that notice to Owners of any Event of Default under (b) under the caption "Events of Default," will be subject to the provisions under the caption "Notice and Opportunity to Cure Certain Defaults" and will not be given until the grace period has expired.

The Trustee

Appointment; Duties and Responsibilities of the Trustee. U.S. Bank National Association will serve as the initial Trustee with respect to the Bonds.

(a) Prior to the occurrence of an Event of Default of which it has or is deemed to have notice under the Indenture, and after the curing or waiver of any Event of Default that may have occurred: (i) the Trustee undertakes to perform such duties and only such duties as are specifically set forth in the Indenture, and no implied covenants or obligations will be read into the Indenture against the Trustee; and (ii) in the absence of bad faith on its part, the Trustee may conclusively rely, as to the truth of the statements and the correctness of the opinions expressed therein, upon certificates or opinions furnished to the Trustee that conform to the requirements of the Indenture; but the Trustee is under a duty to examine such certificates and opinions to determine whether they conform to the requirements of the Indenture.

(b) In case an Event of Default of which the Trustee has or is deemed to have notice under the Indenture has occurred and is continuing, the Trustee will exercise such of the rights and powers vested in it by the Indenture, and use the same degree of care and skill in their exercise, as a prudent person would exercise or use in the conduct of such person's own affairs.

(c) No provision of the Indenture will be construed to relieve the Trustee from liability for its own negligent action, its own negligent failure to act, or its own willful misconduct, except that: (i) this paragraph (c) will not be construed to limit the effect of paragraph (b) under this caption "Appointment; Duties and Responsibilities of the Trustee"; (ii) the Trustee is not liable for any error of judgment made in good faith by an authorized officer of the Trustee, unless it is proven that the Trustee was negligent in ascertaining the pertinent facts; (iii) the Trustee is not liable with respect to any action it takes or omits to be taken by it in good faith in accordance with the direction of the Owners under any provision of the Indenture relating to the time, method and place of conducting any proceeding for any remedy available to the Trustee, or exercising any trust or power conferred upon the Trustee under the Indenture; and (iv) no provision of the Indenture will require the Trustee to expend or risk its own funds or otherwise incur any liability in the performance of any of its duties under the Indenture, or in the exercise of any of its rights or powers, if it has reasonable grounds for believing that the repayment of such funds or adequate indemnity against such risk or liability is not reasonably assured to it.

(d) The Trustee will maintain records of all investments and disbursements of proceeds in the Funds through the date ending 6 years following the date on which all the Bonds have been retired.

(e) Whether or not expressly so provided, every provision of the Indenture relating to the conduct or affecting the liability of or affording protection to the Trustee is subject to the provisions described under this caption "Appointment; Duties and Responsibilities of the Trustee."

Certain Rights of the Trustee. Except as otherwise provided in the provisions under the caption "Appointment; Duties and Responsibilities of the Trustee":

(a) The Trustee may rely and is protected in acting or refraining from acting upon any resolution, certificate, statement, instrument, opinion, report, notice, request, direction, consent, order, approval, bond, debenture or other paper or document believed by it to be genuine and to have been signed or presented by the proper party or parties;

(b) Any statement or certification of the SFPUC under the Indenture will be sufficiently evidenced by a Certificate of the SFPUC (unless other evidence thereof is specifically prescribed), any request, direction, order or demand of the SFPUC under the Indenture will be sufficiently evidenced by an Order of the SFPUC (unless other evidence thereof is specifically prescribed) and any resolution of the SFPUC may be sufficiently evidenced by a copy thereof certified by the Secretary of the SFPUC;

(c) Whenever in the administration of the Indenture the Trustee deems it desirable that a matter be proved or established prior to taking, suffering or omitting any action under the Indenture, the Trustee (unless other evidence thereof is specifically prescribed) may, in the absence of bad faith on its part, rely upon a Certificate of the SFPUC;

(d) The Trustee may consult with counsel and the written advice of such counsel or an opinion of counsel or of Bond Counsel will be full and complete authorization and protection for any action taken, suffered or omitted by it in good faith and in accordance with such advice or opinion;

(e) The Trustee is under no obligation to exercise any of the rights or powers vested in it by the Indenture at the request or direction of any of the Owners unless the Owners have offered to the Trustee security or indemnity satisfactory to the Trustee as to its terms, coverage, duration, amount and otherwise with respect to the costs, expenses and liabilities which may be incurred by it in compliance with such request or direction, and the provision of such indemnity will be mandatory for any remedy taken upon direction of the Owners of a majority in aggregate Principal amount of the Outstanding Bonds;

(f) The Trustee is not required to make any inquiry or investigation into the facts or matters stated in any resolution, certificate, statement, instrument, opinion, report, notice, request, direction, consent, order, approval, bond, debenture or other paper or document but the Trustee, in its discretion, may make such further inquiry or investigation into such facts or matters as it may see fit and, if the Trustee determines to make such further inquiry or investigation, it is entitled to examine the books, records and premises of the SFPUC, in person or by agent or attorney;

(g) The Trustee may execute any of its trusts or powers or perform any duties under the Indenture either directly or by or through agents or attorneys, and may in all cases pay, subject to reimbursement as provided under the caption "Compensation and Expenses of the Trustee," such reasonable compensation as it deems proper to all such agents and attorneys reasonably employed or retained by it, and the Trustee will not be responsible for any misconduct or negligence of any agent or attorney appointed with due care by it;

(h) The Trustee is not required to take notice or deemed to have notice of any default or Event of Default under the Indenture, except an Event of Default under (a) under the caption "Events of Default," (a), unless an officer of the Trustee has actual knowledge thereof or has received notice in writing of such default or Event of Default from the SFPUC or the Owners of at least 25% in aggregate Principal amount of the Outstanding Bonds, and in the absence of any such notice, the Trustee may conclusively assume that no such default or Event of Default exists;

(i) The Trustee is not required to give any bond or surety with respect to the performance of its duties or the exercise of its powers under the Indenture;

(j) In the event the Trustee receives inconsistent or conflicting requests and indemnity from two or more groups of Owners, each representing less than a majority in aggregate Principal amount of the Outstanding Bonds, pursuant to the provisions of the Indenture, the Trustee, in its sole discretion, may determine what action, if any, will be taken;

(k) The Trustee's immunities and protections from liability and its right to indemnification in connection with the performance of its duties under the Indenture will extend to the Trustee's officers, directors, agents, attorneys and employees. Such immunities and protections and right to indemnification, together with the Trustee's right to compensation, will survive the Trustee's resignation or removal, the defeasance or discharge of the Indenture and final payment of the Bonds;

(l) The permissive right of the Trustee to take the actions permitted by the Indenture will not be construed as an obligation or duty to do so;

(m) Except for information provided by the Trustee concerning the Trustee, the Trustee will have no responsibility for any information in any offering memorandum or other disclosure material distributed with respect to the Bonds, and the Trustee will have no responsibility for compliance with any state or federal securities laws in connection with the Bonds; and

(n) The Trustee will not be considered in breach of or in default in its obligations under the Indenture or progress in respect thereto in the event of delay in the performance of such obligations due to unforeseeable causes beyond its control and without its fault or negligence, including, acts of God or of the public enemy or terrorists, acts of a government, fires, floods, epidemics, quarantine restrictions, strikes, embargoes, earthquakes, explosion, mob violence, riot, inability to procure or general sabotage or rationing of labor, equipment, facilities, sources of energy, material or supplies in the open market, condemnation, and unusually severe weather or delays of suppliers or subcontractors due to such causes.

Qualifications of the Trustee. There will at all times be a trustee under the Indenture which will be a corporation or banking association organized and doing business under the laws of the United States of America or of any state, authorized under such laws to exercise corporate trust powers, which satisfies the combined capital and surplus of requirements of the Indenture, or is an affiliate of, or has a contractual relationship with, a corporation or banking association meeting such capital and surplus requirement which guarantees the obligations and liabilities of the proposed trustee, and which is subject to supervision or examination by federal or state banking authority. If such corporation or banking association publishes reports of condition at least annually, pursuant to law or the requirements of any supervising or examining authority above referred to, then for purposes of the provisions of the Indenture, the combined capital and surplus of such corporation or banking association will be deemed to be its combined capital and surplus as set forth in its most recent report of condition so published. If at any time the Trustee will cease to be eligible in accordance with the provisions of the Indenture described in this paragraph, it will resign promptly in the manner and with the effect specified in the Indenture.

Resignation or Removal of the Trustee; Appointment of Successor Trustee.

(a) No resignation or removal of the Trustee and no appointment of a successor Trustee pursuant to the Indenture will become effective until the acceptance of appointment by the successor Trustee under the caption "Acceptance of Appointment by Successor Trustee."

(b) The Trustee may resign at any time by giving written notice to the SFPUC. Upon receiving such notice of resignation, the SFPUC will promptly appoint a successor Trustee by an instrument in writing. If an instrument of acceptance has not been delivered to the resigning Trustee within 30 days after the giving of such notice of resignation, the resigning Trustee or any Owner of a Bond then Outstanding may petition a court of competent jurisdiction for the appointment of a successor Trustee.

(c) Prior to the occurrence and continuance of an Event of Default under the Indenture, or after the curing or waiver of any such Event of Default, the SFPUC or the Owners of a majority in aggregate Principal amount of the Outstanding Bonds may remove the Trustee and will appoint a successor Trustee. In the event there will have occurred and be continuing an Event of Default under the Indenture, the Owners of a majority in aggregate Principal amount of the Outstanding Bonds may remove the Trustee and will appoint a successor Trustee. In each instance such removal and appointment will be accomplished by an instrument or concurrent instruments in writing signed by the SFPUC or such Owners, as the case may be, and delivered to the Trustee, the SFPUC and Owners of the Outstanding Bonds.

(d) If at any time: (i) the Trustee shall cease to be eligible and qualified under the Indenture and shall fail or refuse to resign after written request to do so by the SFPUC or the Owner of any Bond, or (ii) the Trustee shall become Insolvent, then in either such case (A) the SFPUC may remove the Trustee and appoint a successor Trustee in accordance with the provisions described in paragraph (c) under this caption "Resignation or Removal of the Trustee; Appointment of Successor Trustee"; or (B) any Owner of a Bond then Outstanding may, on behalf of the Owners of all Outstanding Bonds, petition a court of competent jurisdiction for removal of the Trustee and appointment of a successor Trustee.

(e) The SFPUC will give written notice of each resignation or removal of the Trustee and each appointment of a successor Trustee to each Owner of Bonds then Outstanding as listed in the Bond Register. Each such notice will include the name and address of the applicable corporate trust office of the successor Trustee.

Merger, Succession or Consolidation of Trustee. Any corporation or association: (a) into which the Trustee is merged or with which it is consolidated; (b) resulting from any merger or consolidation to which the Trustee is a party; or (c) succeeding to all or substantially all of the corporate trust business of the Trustee, will be the successor Trustee without the execution or filing of any document or the taking of any further action. Any such successor must nevertheless be eligible and qualified under the provisions of the Indenture.

Notices to Owners; Waiver.

(a) Where the Indenture provides for notice to Owners of any event, such notice will be sufficiently given (unless otherwise expressly provided therein) if in writing and mailed, first-class postage prepaid, to each Owner affected by each event, at such Owner's address as it appears on the Bond Register, not later than the latest date, and not earlier than the earliest date, prescribed for the first giving of such notice. In any case where notice to Owners is given by mail, neither the failure to mail such notice, nor any default in any notice so mailed to any particular Owner will affect the sufficiency of such notice with respect to other Owners. Where the Indenture provides for notice in any manner, such notice may be waived in writing by the Person entitled to receive such notice, either before or after the event, and such waiver will be the equivalent of such notice. Waivers of notice by Owners will be filed with the Trustee, but such filing will not be a condition precedent to the validity of any action taken in reliance upon such waiver.

(b) Where the Indenture provides for notice to the Owners of any event, the form of the notice will prominently include a title block, separate from the body of the notice, which will include the following information: (i) the complete title of the Bonds; (ii) the complete name of the SFPUC; (iii) the entire nine-digit CUSIP number of each affected Bond; (iv) the record date for the notice; and (v) a summary that is no more than the maximum number of characters permitted by the Securities Depository.

(c) Any notice required or permitted by the Indenture to be given to the Securities Depository will be given to it in the manner provided by the Indenture and described under this caption "Notice to Owners; Waiver" for giving notice to Owners, and also will be given in the format requested by the Securities Depository to such address as may be specified by the Securities Depository in writing to the Trustee.

Discharge and Defeasance

Discharge. If (a) the Principal of any Bonds and the interest due or to become due thereon together with any premium required by redemption of any of such Bonds prior to maturity will be paid, or is caused to be paid, or is provided for under the Indenture, at the times and in the manner to which reference is made in such Bonds, according to the true intent and meaning thereof, or such Bonds will have been paid and discharged in accordance with the Indenture, and (b) and all Swap Agreement Payments and other payments due in accordance with the provisions of the Swap Agreements and the Indenture have been made and (c) all of the covenants, agreements, obligations, terms and conditions of the SFPUC under the Indenture will have been kept, performed and observed and there will have been paid to the Trustee all sums of money due or to become due to it in accordance with the terms and provisions of the Indenture, then the right, title and interest of the Trustee in all money and other property then held under the Indenture will thereupon cease and the Trustee, on request of and at the expense of the SFPUC, will release the Indenture and will execute such documents to evidence such release as may be reasonably required by the SFPUC and will turn over to the SFPUC, or to such other Person as may be entitled to receive the same, all balances remaining in any Funds except for amounts required to pay such Bonds or held pursuant to the Indenture.

Defeasance. If the SFPUC deposits with the Trustee money or non-callable Government Securities which, together with the earnings thereon, are sufficient to pay the Principal, Purchase Price or Redemption Price of any particular Bond or Bonds, or portions thereof, becoming due, together with all interest accruing thereon to the due date or redemption date, and pays or makes provision for payment of all fees, costs and expenses of the Trustee due or to become due with respect to such Bonds, all liability of the SFPUC with respect to such Bond or Bonds (or portions thereof) will cease, such Bond or Bonds (or portions thereof) will be deemed not to be Outstanding under the Indenture and the Owner or Owners of such Bond or Bonds (or portions thereof) will be restricted exclusively to the money or Government Securities so deposited, together with any earnings thereon, for any claim of whatsoever nature with respect to such Bond or Bonds (or portions thereof), and the Trustee will hold such money, Government Securities and earnings in trust exclusively for such Owner or Owners and such money, Government Securities and earnings will not secure any other Bonds under the Indenture. In determining the sufficiency of the money and Government Securities deposited pursuant to the provisions of the Indenture described in this paragraph, the Trustee will receive, at the expense of the SFPUC, and may rely upon: (a) a verification report of a firm of nationally recognized independent certified public accountants or other qualified firm acceptable to the SFPUC; and (b) an opinion of Bond Counsel to the effect that (1) all conditions set forth in the Indenture have been satisfied and (2) that defeasance of the Bonds will not cause interest on any Tax-Exempt Bonds to be includable in gross income for federal income tax purposes. Upon such defeasance all rights of the SFPUC, including its right to provide for optional redemption of Bonds on dates other than planned pursuant to such defeasance, will cease unless specifically retained by filing a written notification thereof with the Trustee on or prior to the date the Government Securities are deposited with the Trustee. When a Bond is deemed to be paid under the Indenture, as aforesaid, it will no longer be secured by or entitled to the benefits of the Indenture, except for the purposes of any such payment from such money or Government Securities and except for the provisions of the Indenture as described in this paragraph.

Notice of Defeasance.

(a) If money or non-callable Government Securities have been deposited with the Trustee pursuant to the Indenture for payment of less than all Bonds of a Series and maturity, the Bonds of such Series and maturity to be so paid from such deposit will be selected by the Trustee by lot by such method as will provide for the selection of portions (in authorized denominations) of the Principal of Bonds of such Series and maturity of a denomination larger than the smallest authorized denomination. Such selection will be made within seven days after the money or Government Securities have been deposited with the Trustee. This selection process will be in lieu of the selection process otherwise provided with respect to redemption of Bonds in the Indenture. After such selection is made, Bonds that are to be paid from such deposit (including Bonds issued in exchange for such Bonds pursuant to the transfer or exchange provisions of the Indenture) will be identified by a separate CUSIP number or other designation satisfactory to the Trustee. The Trustee will notify Owners whose Bonds (or portions thereof) have been selected for payment from the money or Government Securities on deposit and will direct such Owners to surrender their Bonds to the Trustee in exchange for Bonds with the appropriate designation. The selection of Bonds for payment from such deposit pursuant to the provisions of the Indenture described under this paragraph will be conclusive and binding on the SFPUC. The SFPUC will give to the Trustee in form satisfactory to it irrevocable instructions to give notice of the deposit of money or Government Securities, the selection of Bonds to be redeemed including CUSIP numbers and the anticipated date of redemption. The Trustee will promptly give such notice to the Owners including the information required under the Indenture.

(b) In case any of the Bonds, for the payment of which money or Government Securities have been deposited with the Trustee pursuant to the Indenture, are to be redeemed on any date prior to their maturity, the SFPUC, in addition to any notice required as described in paragraph (a) under this caption "Notice of Defeasance," will give to the Trustee in form satisfactory to it irrevocable instructions to give notice of redemption of such Bonds on the redemption date for such Bonds as provided in the Indenture.

(c) In addition to the foregoing notice, in the event such Bonds to be redeemed are not by their terms subject to redemption within the next succeeding 65 days, the Trustee will give further notice to the Owners that the deposit required by the Indenture has been made with the Trustee and that said Bonds are deemed to have been paid in accordance with the Indenture and stating the maturity or redemption date or dates upon which money is to be available for the payment of the Principal, Purchase Price or Redemption Price of said Bonds; such further notice will be given promptly following the making of the deposit required by the Indenture; and such further notice also will be given in the manner set forth in the Indenture; but no defect in such further notice nor any failure to give all or any portion of such further notice will in any manner defeat the effectiveness of the deposit.

(d) If the SFPUC has retained any rights as described in the last sentence of the provisions under the caption "Defeasance," notice thereof will be sent to Owners of such Bonds as soon as practicable and not later than any notice required as described in paragraphs (a) or (b) under this caption "Notice of Defeasance."

Supplemental Indentures

Supplemental Trust Indentures Without Owner Consent.

(a) The SFPUC may from time to time and at any time adopt a Supplemental Trust Indenture, without the consent of or notice to any Owner, to effect any one or more of the following:

(i) provide for the issuance of Bonds in accordance with the provisions of the Indenture;

(ii) cure any ambiguity or defect or omission or correct or supplement any provision in the Indenture or in any Supplemental Trust Indenture;

(iii) grant to or confer upon the Trustee for the benefit of the Owners any additional rights, remedies, powers, authority or security that may lawfully be granted to or conferred upon the Owners or the Trustee that are not contrary to or inconsistent with the Indenture as then in effect or to subject to the pledge and lien of the Indenture additional revenues, properties or collateral;

(iv) add to the covenants and agreements of the SFPUC in the Indenture other covenants and agreements thereafter to be observed by the SFPUC or to surrender any right or power in the Indenture reserved to or conferred upon the SFPUC that are not contrary to or inconsistent with the Indenture as then in effect;

(v) permit the appointment of a co-trustee under the Indenture;

(vi) modify, alter, supplement or amend the Indenture in such manner as will permit the qualification of the Indenture, if required, under the Indenture Act of 1939 or, the Securities Act of 1933, as from time to time amended, or any similar federal statute hereafter in effect;

(vii) make any other change in the Indenture that will not be materially adverse to the interests of the Owners and which does not involve a change described in the Indenture requiring consents of specific Owners; provided, that whether a Credit Facility is in place to further secure a Series of Bonds will not be taken into account in determining whether an amendment is materially adverse to the interests of such Owners; or

(viii) amend, modify, alter or replace the Letter of Representations as provided in the Indenture or other provisions relating to Book Entry Bonds.

Supplemental Trust Indentures Requiring Owner Consent. The SFPUC, at any time and from time to time, may adopt a Supplemental Trust Indenture for the purpose of making any modification or amendment to the Indenture, but only with the written consent, given as provided in the Indenture, of the Owners of a majority in aggregate Principal amount of the Outstanding Bonds at the time such consent is given, and in case less than all of the Bonds then Outstanding are affected by the modification or amendment, of the Owners of a majority in aggregate Principal amount of the Outstanding Bonds so affected at the time such consent is given; provided, that if such modification or amendment will, by its terms, not take effect so long as any Bonds so affected remain Outstanding, the consent of the Owners of such Bonds will not be required and such Bonds will not be deemed to be Outstanding for the purpose of any calculation of Outstanding Bonds under such provisions of the Indenture. Notwithstanding the foregoing, no modification or amendment contained in any such Supplemental Trust Indenture will permit any of the following, without the consent of each Owner whose rights are affected thereby: (a) a change in the terms of stated maturity or redemption of any Bond or of any interest thereon; (b) a reduction in the Principal, Purchase Price or Redemption Price of any Bond or in the rate of interest thereon or a change in the currency in which such Bond is payable; (c) the creation of a lien on or a pledge of any part of the money or assets pledged under the Indenture other than as permitted hereby; (d) the granting of a preference or priority of any Bond over any other Bond; (e) a reduction in the aggregate Principal amount of Bonds of which the consent of the Owners is required to effect any such modification or amendment; or (f) a change in the provisions under the caption "Waiver of Defaults." Notwithstanding the foregoing, the Owner of any Bond may extend the time for payment of the Principal, Purchase Price or Redemption Price of or interest on such Bond; provided, that upon the occurrence of an Event of Default, funds available under the Indenture for the payment of the Principal, Purchase Price or Redemption Price of and interest on the Bonds will not be applied to any payment so extended until all Principal, Purchase Price, Redemption Price and interest payments that have not been extended have first been paid in full. Notice of any Supplemental Trust Indenture executed pursuant to the provisions of the Indenture described in this paragraph will be given to the Owners promptly following the adoption thereof by the SFPUC.

Consent of Owners and Opinions. Each Supplemental Trust Indenture executed and delivered pursuant to the provisions of the Indenture will take effect only when and as described in this paragraph. A copy of such Supplemental Trust Indenture (or brief summary thereof or reference thereto in form approved by the Trustee), together with a request to Owners for their consent thereto in form satisfactory to the Trustee, will be sent by the Trustee to the Owners, at the expense of the SFPUC, by first class mail, postage prepaid; provided, that a failure to mail such request will not affect the validity of the Supplemental Trust Indenture when consented to as provided in the Indenture. Such Supplemental Trust Indenture will not be effective unless and until there will have been filed with the Trustee (a) the written consents of Owners of the percentage of Bonds specified in the Indenture, and (b) the written opinion of Bond Counsel described in the Indenture. Any such consent will be binding upon the

Owner giving such consent and upon any subsequent Owner of such Bonds and of any Bonds issued in exchange therefor or in lieu thereof (whether or not such subsequent Owner has notice thereof), unless such consent is revoked in writing by the Owner giving such consent or a subsequent Owner of such Bonds by filing such revocation with the Trustee prior to the date the Trustee receives the material required as described in (a) and (b) of this paragraph.

Consent of Trustee and Qualified Counterparties.

(a) Notwithstanding any provision of the Indenture to the contrary, the SFPUC will not adopt any Supplemental Trust Indenture that adversely affects the rights, duties or immunities of the Trustee under the Indenture without having received the prior written consent of the Trustee.

(b) Notwithstanding any provision of the Indenture to the contrary, the SFPUC will not adopt any Supplemental Trust Indenture that materially and adversely affects the rights or duties of any Qualified Counterparty under the Indenture without having received the prior written consent of each such Qualified Counterparty.

Notation on Bonds. Bonds authenticated and delivered after the effective date of any action taken as provided in the Indenture may, and, if the SFPUC so determines, will bear a notation by endorsement or otherwise in form approved by the Trustee as to such action, and in that case upon demand of the Owner of any Outstanding Bond at such effective date and presentation of such Bond for the purpose at the office of the Trustee, or upon any transfer of any Bond Outstanding at such effective date, suitable notation will be made on such Bond or upon any Bond issued upon any such transfer by the Trustee as to any such action. If the SFPUC will so determine, new Bonds so modified as in the opinion of the Trustee and the SFPUC to conform to such action will be prepared, authenticated and delivered, and upon demand of the Owner of any Bond then Outstanding will be exchanged, without cost to such Owner for Bonds then Outstanding, upon surrender of such Bonds for Bonds of an equal aggregate Principal amount and of the same Series, maturity and interest rate, in any authorized denomination.

Delivery of Opinion. Subject to the provisions of the Indenture, the Trustee in executing or accepting the additional trusts permitted by the Indenture or the modifications thereby of the trusts created by the Indenture may rely, and will be fully protected in relying, on an opinion of Bond Counsel stating that (a) the execution of such Supplemental Trust Indenture is authorized or permitted by the Indenture, (b) all conditions precedent to the execution and delivery of such Supplemental Trust Indenture have been complied with and (c) the execution and performance of such Supplemental Trust Indenture will not, in and of itself, adversely affect the federal income tax status of interest on the Tax-Exempt Bonds. The Trustee may accept and rely upon such opinion of Bond Counsel as conclusive evidence that any Supplemental Trust Indenture executed pursuant to the provisions of the Indenture complies with the requirements of the Indenture.

Effect of Supplemental Trust Indentures. Upon the adoption of any Supplemental Trust Indenture under the Indenture, the Indenture will be modified in accordance therewith, and such Supplemental Trust Indenture will form a part of the Indenture for all purposes; and every Owner of any Bond theretofore or thereafter authenticated and delivered under the Indenture will be bound thereby.

Credit Facility Provider Rights

Except as otherwise provided in the Supplemental Trust Indenture authorizing the issuance of a Series of Bonds, if the Credit Facility Provider with respect to such Series of Bonds is not in default in respect of any of its obligations under the Credit Facility securing such Series of Bonds and is not Insolvent, the following will apply:

(a) Such Credit Facility Provider, and not the actual Owners, will be deemed to be the Owner of such Series of Bonds at all times for the purposes of (i) giving any approval or consent to the effectiveness of any Supplemental Trust Indenture other than a Supplemental Trust Indenture providing for (A) a change in the terms of redemption, purchase or maturity of the Principal of any Outstanding Bond of such Series or any interest thereon or a reduction in the Principal amount, Purchase Price or Redemption Price thereof or in the rate of interest thereon, or (B) a reduction in the percentage of Owners required to approve or consent to the effectiveness of any Supplemental Trust Indenture, and (ii) giving any approval or consent or exercising any remedies in connection with the occurrence of an Event of Default.

(b) Any amendment to the Indenture requiring the consent of Owners of such Series of Bonds will also require the prior written consent of such Credit Facility Provider.

(c) Any amendment to the Indenture not requiring the consent of Owners of such Series of Bonds will require the prior written consent of such Credit Facility Provider if its rights will be materially and adversely affected by such amendment.

(d) The prior written consent of such Credit Facility Provider will be a condition precedent to the substitution by the SFPUC of any Reserve Account Credit Policy for cash deposited in any Reserve Account securing such Series of Bonds.

(e) In the event the maturity of the Bonds is accelerated, such Credit Facility Provider may elect, in its sole discretion, to pay the accelerated Principal of such Series of Bonds and interest thereon to the date of acceleration (to the extent unpaid by the SFPUC). Upon payment of such accelerated Principal and interest, the obligations of such Credit Facility Provider under such Credit Facility with respect to such Series of Bonds will be fully discharged.

(f) Such Credit Facility Provider will have the right to institute any suit, action or proceeding at law or in equity under the same terms as an Owner of such Series of Bonds in accordance with the Indenture.

(g) Such Credit Facility Provider will, to the extent it makes any payment of Principal or Purchase Price of or interest on such Series of Bonds, become subrogated to the rights of the recipients of such payments in accordance with the terms of such Credit Facility.

(h) The Principal or Purchase Price of or interest on such Series of Bonds paid by such Credit Facility Provider under such Credit Facility will not be deemed paid for purposes of the Indenture, and the Bonds with respect to which such payments were made will remain Outstanding and continue to be due and owing until paid by the SFPUC in accordance with the Indenture.

(i) In the event of any defeasance of such Series of Bonds, the SFPUC will provide such Credit Facility Provider with copies of all documents required by the provisions under the caption "Discharge and Defeasance" to be delivered to the Trustee.

(j) The SFPUC will not discharge the Indenture unless all amounts due or to become due to such Credit Facility Provider have been paid in full or duly provided for.

(k) The SFPUC will send or cause to be sent to such Credit Facility Provider copies of notices required to be sent to Owners or the Trustee under the Indenture.

(l) The SFPUC will observe any payment procedures under such Credit Facility required by such Credit Facility Provider as a condition to the issuance and delivery of the Credit Facility.

Miscellaneous

Disposition of Unclaimed Funds. Notwithstanding any provisions of the Indenture, and subject to applicable unclaimed property laws, any money deposited with the Trustee in trust for the payment of the Principal, Purchase Price or Redemption Price of or interest on the Bonds remaining unclaimed for 2 years after the payment thereof, to the extent permitted by applicable law, shall be paid to SFPUC, whereupon all liability of the Trustee with respect to such money will cease, and the Owners of such Bonds will thereafter look solely to the SFPUC for payment of any amounts then due.

Limitation of Rights. Nothing in the Indenture or in the Bonds expressed or implied is intended or will be construed to give to any Person other than the SFPUC, the Trustee, each Credit Facility Provider, each Qualified Counterparty and the Owners from time to time of the Bonds any rights, remedies or claims under or by reason of the Indenture or any covenant, condition or provision therein contained; and all the covenants, conditions and provisions in the Indenture contained are and will be held to be for the sole and exclusive benefit of the SFPUC, the

Trustee, each Credit Facility Provider, each Qualified Counterparty and the Owners from time to time of the Bonds. Each such Credit Facility Provider and Qualified Counterparty will be a third-party beneficiary of the Indenture.

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APPENDIX B

SFPUC POWER ENTERPRISE FINANCIAL STATEMENTS

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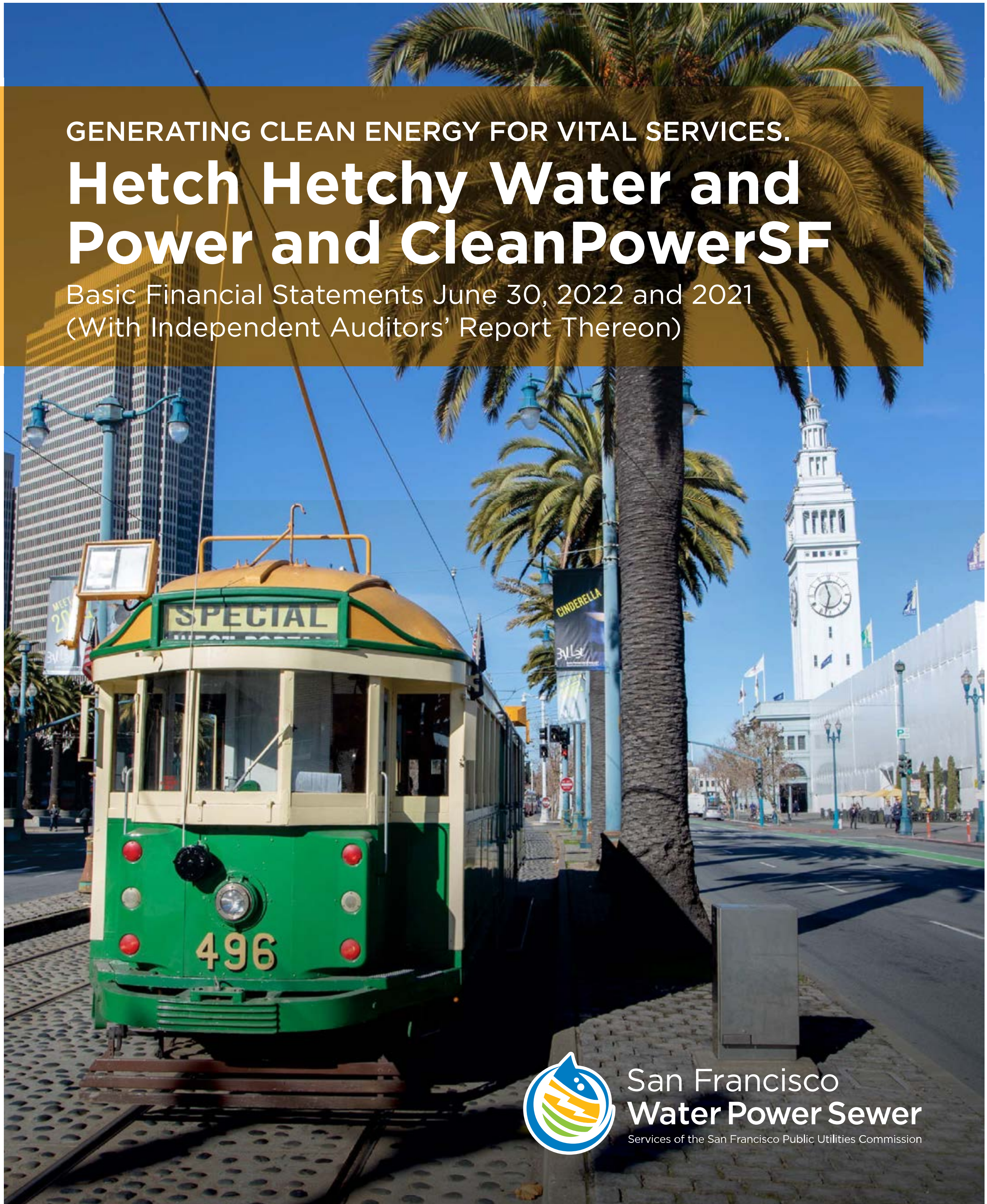
GENERATING CLEAN ENERGY FOR VITAL SERVICES.

Hetch Hetchy Water and Power and CleanPowerSF

Basic Financial Statements June 30, 2022 and 2021
(With Independent Auditors' Report Thereon)



San Francisco
Water Power Sewer
Services of the San Francisco Public Utilities Commission

HETCH HETCHY WATER AND POWER AND CLEANPOWERSF

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KPMG LLP
Suite 1400
55 Second Street
San Francisco, CA 94105

Independent Auditors' Report

The Honorable Mayor and Board of Supervisors
City and County of San Francisco:

Report on the Audit of the Financial Statements

Opinions

We have audited the financial statements of the business-type activities and each major fund of Hetch Hetchy Water and Power and CleanPowerSF (Hetch Hetchy), as of and for the years ended June 30, 2022 and 2021, and the related notes to the financial statements, which collectively comprise Hetch Hetchy's basic financial statements for the years then ended as listed in the table of contents.

In our opinion, the accompanying financial statements referred to above present fairly, in all material respects, the respective financial position of Hetch Hetchy, as of June 30, 2022 and 2021, and the respective changes in financial position and cash flows thereof for the years then ended in accordance with U.S. generally accepted accounting principles.

Basis for Opinions

We conducted our audits in accordance with auditing standards generally accepted in the United States of America (GAAS) and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Our responsibilities under those standards are further described in the Auditors' Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of Hetch Hetchy and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audits. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Emphasis of Matter

As discussed in Note 1, the financial statements of Hetch Hetchy are intended to present the financial position, the changes in financial position, and, where applicable, cash flows of only that portion of the business-type activities and each major fund of the City and county of San Francisco, California that is attributable to the transactions of the Enterprise. They do not purport to, and do not, present fairly the financial position of the City and County of San Francisco, California, as of June 30, 2022 and 2021, the changes in its financial position, or, where applicable, its cash flows for the years then ended in accordance with U.S. generally accepted accounting principles. Our opinions are not modified with respect to this matter.

Responsibilities of Management for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with U.S. generally accepted accounting principles, and for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinions. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with GAAS and *Government Auditing Standards* will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

In performing an audit in accordance with GAAS and *Government Auditing Standards* , we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of Hetch Hetchy's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control related matters that we identified during the audit.

Required Supplementary Information

U.S. generally accepted accounting principles require that the management's discussion and analysis be presented to supplement the basic financial statements. Such information is the responsibility of management and, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with GAAS, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audits of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated January 27, 2023 on our consideration of Hetch Hetchy's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of Hetch Hetchy's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering Hetch Hetchy's internal control over financial reporting and compliance.

KPMG LLP

San Francisco, California
January 27, 2023

This section presents management's analysis of San Francisco Hetch Hetchy Water and Power and CleanPowerSF Enterprise's (Hetch Hetchy or the Enterprise) financial condition and activities as of and for fiscal years ended June 30, 2022 and 2021. Management's Discussion and Analysis (MDA) is intended to serve as an introduction to the Enterprise's financial statements. This information should be read in conjunction with the audited financial statements that follow this section. All dollar amounts, unless otherwise noted, are expressed in thousands of dollars.

In May 2016, San Francisco Public Utilities Commission (SFPUC or the Commission) launched CleanPowerSF, a Community Choice Aggregation (CCA) program into operation, pooling the electricity demands of their residents and businesses for the purpose of buying electricity on behalf of those customers. CleanPowerSF provides San Francisco with new clean energy alternatives, with its objectives to reduce greenhouse gas emissions, and to provide the City and County of San Francisco's (the City) energy consumers with renewable electricity supplies at competitive rates. The SFPUC intends CleanPowerSF to be financially independent, with ability to set rates and charges with adequate revenues, and to issue debt to support its operations and future projects. CleanPowerSF is discretely presented as a fund of the Enterprise starting fiscal year 2017.

The information in this MDA is presented under the following headings:

- Organization and Business
- Overview of the Financial Statements
- COVID-19
- Financial Analysis
- Capital Assets
- Debt Administration
- Rates and Charges
- Request for Information

Organization and Business

SFPUC is a department of the City that is responsible for the maintenance, operation, and development of three utility enterprises: Water, Wastewater, and Hetch Hetchy. The Enterprise was established as a result of the Raker Act of 1913, which granted water and power resource rights-of-way on the Tuolumne River in Yosemite National Park and the Stanislaus National Forest to the City. The Enterprise operates the Hetch Hetchy project, which provides both electricity generation and upcountry water service; and is engaged in the collection and conveyance of approximately 85% of the regional system's water supply and in the generation and transmission of electricity.

In normal rain years, 85% of San Francisco's drinking water starts out as snow falling on 459 square miles of watershed land in Yosemite National Park and the City may supplement water supply from an additional 193 square miles of watershed in Yosemite National Park and the Stanislaus National Forest during extremely dry years. As the snow melts, it collects in the SFPUC's storage reservoirs, then flows by gravity through over 150 miles of pipelines and tunnels, it turns the turbines in three hydroelectric powerhouses, generating approximately 1.2 billion kilowatt hours of electricity per year. The electricity travels over 160 miles of transmission and distribution lines from the upcountry powerhouses to the San Francisco Bay Area.

Approximately 69% of the electricity generated by Hetchy Power was used to provide electric service to the City's municipal customers (including the San Francisco Municipal Transportation Agency, Recreation and Parks Department, the Port of San Francisco, San Francisco International Airport and its tenants, Zuckerberg San Francisco General Hospital and Trauma Center, City streetlights, Moscone Convention Center, and the

Water and Wastewater Enterprises). The remaining 31% of electricity generated was sold to CleanPowerSF and the wholesale electric market.

Hetch Hetchy

Hetch Hetchy provides reliable, high-quality water and electric energy to the City and other customers, protects watershed resources in cooperation with Federal agencies, operates and maintains facilities to a high standard of safety and reliability, and maximizes revenue opportunities within approved levels of risk.

Hetch Hetchy, a stand-alone enterprise is comprised of three funds: 1) Hetch Hetchy Water (Hetchy Water) upcountry operations and water system; 2) Hetch Hetchy Power (Hetchy Power), also referred to as the Power Enterprise, which is wholly contained within the Hetch Hetchy fund; and 3) CleanPowerSF, which is an enterprise fund to aggregate the buying power of customers within San Francisco to purchase renewable energy sources or clean power, is reported as a separate fund of Hetch Hetchy. A number of the facilities are joint assets and used for both water and power generation.

Hetchy Water

For efficiency and to streamline the coordination of upcountry water and power operations, Hetchy Water operates upcountry and joint asset facilities, managing resources in an environmentally responsible manner to a high standard of safety and reliability while meeting regulatory requirements. It is responsible for operating the Hetch Hetchy Reservoir, the main source of water for the Hetch Hetchy system. Hetchy Water operates, maintains, and improves water and power facilities, smaller dams and reservoirs, water transmission systems, power generation facilities, and power transmission assets, including transmission lines to the Newark substation. Hetchy Water delivers high-quality water from upcountry downhill to the Bay Area while optimizing the resulting generation of clean hydropower as water is transported through the system. It maintains land and properties consistent with public health and neighborhood concerns.

Hetchy Power

The core business of Hetchy Power, as a municipal department, is to provide adequate and reliable supplies of electric power to meet the electricity needs of City and County of San Francisco's customers, and to offer, when available, power for the municipal loads and agricultural pumping demands consistent with prescribed contractual obligations and federal law.

Hetchy Power's portfolio consists of hydroelectric generation, onsite solar at SFPUC and other City facilities, generation using bio-methane produced at SFPUC wastewater treatment facilities, and third-party purchases. Consistent with its commitment to the development of cleaner and greener power, and to address environmental concerns and community objectives, Hetchy Power continues to evaluate and expand its existing resource base to include additional renewables, distributed generation, demand management, and energy efficiency programs. As part of its mission and core functions, Hetchy Power provides reliable energy services at reasonable cost to customers, with attention to environmental effects and community concerns.

Hetch Hetchy Joint

A portion of Hetch Hetchy's operating budget, capital program, and assets, provides benefit to both Hetchy Power and Hetchy Water. This is commonly referred to as joint costs and joint assets. Both operating and capital costs that jointly benefit both funds are allocated 55% to Hetchy Power and 45% to Hetchy Water, as has historically been done by the SFPUC.

CleanPowerSF

CleanPowerSF is a community choice aggregation (CCA) program made possible by the 2002 passage of California Assembly Bill 117, enabling communities to purchase power on behalf of their residents and businesses and creating competition in power generation since May 2016. The core business is to provide greener electricity generation to residential and commercial consumers in San Francisco. Through CleanPowerSF, SFPUC seeks to achieve several complementary goals, including affordable and competitive electricity generation rates, a diverse electricity resource portfolio that is comprised of renewable and other clean sources of supply, and high-quality customer service. The program serves more than 380,000 customer accounts and provides San Francisco with an electricity supply from its default "Green" product that is at least 50% California State Renewables Portfolio Standard (RPS)-eligible. Additionally, CleanPowerSF offers "SuperGreen", a 100% RPS-eligible electricity supply, that is available to customers for a small additional cost. On June 1, 2022, CleanPowerSF opened enrollment for its "SuperGreen Saver" product, which provides eligible low-income ratepayers residing in Disadvantaged Communities with 100% RPS electricity at a 20% bill discount.

Overview of the Financial Statements

Hetch Hetchy's financial statements include the following:

Statements of Net Position present information on Hetch Hetchy's assets, deferred outflows, liabilities, and deferred inflows as of year-end, with the difference reported as net position. Over time, increases or decreases in net position may serve as a useful indicator of whether the financial position of Hetch Hetchy is improving or worsening.

While the *Statements of Net Position* provide information about the nature and amount of resources and obligations as of year-end, the *Statements of Revenues, Expenses, and Changes in Net Position* present the results of Hetch Hetchy's operations over the course of the fiscal year and information as to how the net position changed during the year. These statements can be used as an indicator of the extent to which Hetch Hetchy has successfully recovered its costs through user fees and other charges. All changes in net position are reported during the period in which the underlying event giving rise to the change occurs, regardless of the timing of the related cash flows. Thus, revenues and expenses are reported in these statements from some items that will result in cash flows in future fiscal periods, such as delayed collection of operating revenues and the expenses of employee earned but unused vacation leave.

The *Statements of Cash Flows* present changes in cash and cash equivalents resulting from operational, capital financing, non-capital financing, and investing activities. These statements summarize the annual flow of cash receipts and cash payments, without consideration of the timing of the event giving rise to the obligation or receipt and exclude non-cash accounting measures of depreciation or amortization of assets.

The *Notes to Financial Statements* provide information that is essential to a full understanding of the financial statements that is not presented on the face of the financial statements.

COVID-19

On February 25, 2020, the City's Mayor issued a proclamation declaring a local emergency to exist in connection with the imminent spread within the City of the novel coronavirus ("COVID-19"). On March 16, 2020, the City's Health Officer issued a stay safe at home order, Health Officer Order No. C19-07 (the "Stay Safe At Home Order"), requiring most people and City employees to remain in their homes subject to certain exceptions including obtaining essential goods (such as food and necessary supplies), and requiring the closure of nonessential businesses. In addition, Section 2 of the second supplement to the emergency proclamation authorizes the SFPUC to suspend (a) the discontinuation or shutoff of power service for residents and businesses in the City for non-payment of power bills and (b) the imposition of late payment penalties or fees for delinquent power bills through July 11, 2020. The suspension was extended on December 8, 2020 through June 30, 2021, again on April 27, 2021 through March 31, 2022 and then again on February 22, 2022 to July 31, 2022 for shut off of power service for residential customers and to June 30, 2023 for late payment penalties. The suspension of the return of delinquent CleanPowerSF customers to Pacific Gas & Electric Company (PG&E) generation service for failure to pay CleanPowerSF charges was extended to June 30, 2022. This proclamation did not have a material effect on the operations of the Hetch Hetchy Enterprise.

Financial Analysis

Financial Highlights for Fiscal Year 2022

Hetch Hetchy

- Total assets of Hetch Hetchy exceeded total liabilities by $893,577.
- Net position increased by $43,480 or 5.5% during the fiscal year.
- Capital assets, net of accumulated depreciation and amortization, increased by $117,106 or 17.5% to $786,643.
- Operating revenues, excluding interest and investment income, and other non-operating revenues, increased by $89,276 or 22.8% to $480,447.
- Operating expenses, excluding interest expenses, other non-operating expenses, and amortization of premium, discount, and issuance costs, increased by $61,898 or 15.1% to $470,768.

Hetchy Water

- Total assets of Hetchy Water exceeded total liabilities by $276,423.
- Net position increased by $24,519 or 10.9% during the fiscal year.
- Capital assets, net of accumulated depreciation and amortization, increased by $23,526 or 13.3% to $201,007.
- Operating revenues, excluding interest and investment income, and other non-operating revenues, increased by $2,222 or 4.7% to $49,312.
- Operating expenses, excluding other non-operating expenses, increased by $1,784 or 3.5% to $52,303.

Hetchy Power

- Total assets of Hetchy Power exceeded total liabilities by $527,476.

- Net position increased by $21,718 or 4.6% during the fiscal year.
- Capital assets, net of accumulated depreciation and amortization, increased by $93,580 or 19.0% to $585,636.
- Operating revenues, excluding interest and investment income, and other non-operating revenues, increased by $36,859 or 27.0% to $173,242.
- Operating expenses, excluding interest expenses, other non-operating expenses, and amortization of premium, discount, and issuance costs, increased by $10,707 or 7.4% to $156,347.

CleanPowerSF

- Total assets of CleanPowerSF exceeded total liabilities by $89,678.
- Net position decreased by $2,757 or 3.2% during the fiscal year.
- CleanPowerSF had no capital assets, net of accumulated depreciation and amortization as of June 30, 2022.
- Operating revenues, excluding interest and investment income, and other non-operating revenues, increased by $50,195 or 24.2% to $257,893.
- Operating expenses, excluding interest expenses increased by $49,407 or 23.2% to $262,118.

Financial Highlights for Fiscal Year 2021

Hetch Hetchy

- Total assets of Hetch Hetchy exceeded total liabilities by $767,191.
- Net position increased by $16,429 or 2.1% during the fiscal year.
- Capital assets, net of accumulated depreciation and amortization, increased by $63,326 or 10.4% to $669,537.
- Operating revenues, excluding interest and investment income, and other non-operating revenues, decreased by $30,113 or 7.1% to $391,171.
- Operating expenses, excluding interest expenses, other non-operating expenses, and amortization of premium, discount, and issuance costs, increased by $19,845 or 5.1% to $408,871.

Hetchy Water

- Total assets of Hetchy Water exceeded total liabilities by $216,214.
- Net position increased by $13,630 or 6.5% during the fiscal year.

- Capital assets, net of accumulated depreciation and amortization, increased by $16,699 or 10.4% to $177,481.

- Operating revenues, excluding interest and investment income, and other non-operating revenues, increased by $12,137 or 34.7% to $47,090.

- Operating expenses, excluding other non-operating expenses, increased by $5,644 or 12.6% to $50,517.

Hetchy Power

- Total assets of Hetchy Power exceeded total liabilities by $462,136.

- Net position increased by $6,857 or 1.5% during the fiscal year.

- Capital assets, net of accumulated depreciation and amortization, increased by $46,627 or 10.5% to $492,056.

- Operating revenues, excluding interest and investment income, and other non-operating revenues, decreased by $4,488 or 3.2% to $136,383.

- Operating expenses, excluding interest expenses, other non-operating expenses, and amortization of premium, discount, and issuance costs, decreased by $2,489 or 1.7% to $145,638.

CleanPowerSF

- Total assets of CleanPowerSF exceeded total liabilities by $88,841.

- Net position decreased by $4,058 or 4.5% during the fiscal year.

- CleanPowerSF had no capital assets, net of accumulated depreciation and amortization as of June 30, 2021.

- Operating revenues, excluding interest and investment income, and other non-operating revenues, decreased by $37,762 or 15.4% to $207,698.

- Operating expenses, excluding interest expense increased by $16,690 or 8.5% to $212,716.

(Dollars in thousands, unless otherwise stated)

Financial Position

The following tables summarize Hetch Hetchy's changes in net position:

**Table 1A - Consolidated Hetch Hetchy
Comparative Condensed Net Position
June 30, 2022, 2021, and 2020**

	2022	Restated 2021*	2020 **	2022-2021 Change	2021-2020 Change
Total assets:					
Current and other assets	$ 500,159	469,507	441,635	30,652	27,872
Capital assets, net of accumulated depreciation and amortization	786,643	669,537	606,211	117,106	63,326
Total assets	1,286,802	1,139,044	1,047,846	147,758	91,198
Deferred outflows of resources:					
Pensions	15,731	18,133	18,238	(2,402)	(105)
Other post-employment benefits	8,069	8,719	5,452	(650)	3,267
Total deferred outflows of resources	23,800	26,852	23,690	(3,052)	3,162
Liabilities:					
Current liabilities:					
Bonds	1,966	1,928	2,115	38	(187)
Certificates of participation	427	405	384	22	21
Commercial paper	40,019	114,671	63,535	(74,652)	51,136
Other liabilities	94,550	83,058	63,178	11,492	19,880
Subtotal current liabilities	136,962	200,062	129,212	(63,100)	70,850
Long-term liabilities:					
Bonds	192,520	44,384	47,693	148,136	(3,309)
Certificates of participation	12,593	13,026	13,444	(433)	(418)
Other liabilities	51,150	114,392	98,697	(63,242)	15,695
Subtotal long-term liabilities	256,263	171,802	159,834	84,461	11,968
Total liabilities:					
Bonds	194,486	46,312	49,808	148,174	(3,496)
Certificates of participation	13,020	13,431	13,828	(411)	(397)
Commercial paper	40,019	114,671	63,535	(74,652)	51,136
Other liabilities	145,700	197,450	161,875	(51,750)	35,575
Total liabilities	393,225	371,864	289,046	21,361	82,818
Deferred inflows of resources:					
Related to pensions	82,029	3,288	10,843	78,741	(7,555)
Other post-employment benefits	7,670	6,546	3,867	1,124	2,679
Total deferred inflows of resources	89,699	9,834	14,710	79,865	(4,876)
Net position:					
Net investment in capital assets	553,169	500,547	482,986	52,622	17,561
Restricted for debt service	140	99	142	41	(43)
Restricted for capital projects	—	—	6,513	—	(6,513)
Unrestricted	274,369	283,552	278,139	(9,183)	5,413
Total net position	$ 827,678	784,198	767,780	43,480	16,418

*Restated per Governmental Accounting Standards Board (GASB) Statement No. 87, *Leases*.

**Eliminated interfund payable and receivable of $1,800 working capital loan between Hetchy Power and CleanPowerSF in fiscal year 2020.

(Dollars in thousands, unless otherwise stated)

Table 1B - Hetchy Water
Comparative Condensed Net Position
June 30, 2022, 2021, and 2020

	2022	Restated 2021*	2020	2022-2021 Change	2021-2020 Change
Total assets:					
Current and other assets	$ 109,752	98,225	92,711	11,527	5,514
Capital assets, net of accumulated depreciation and amortization	201,007	177,481	160,782	23,526	16,699
Total assets	310,759	275,706	253,493	35,053	22,213
Deferred outflows of resources:					
Pensions	6,696	7,799	7,950	(1,103)	(151)
Other post-employment benefits	3,272	3,725	2,332	(453)	1,393
Total deferred outflows of resources	9,968	11,524	10,282	(1,556)	1,242
Liabilities:					
Current liabilities	17,380	15,873	6,769	1,507	9,104
Long-term liabilities	16,956	43,623	40,441	(26,667)	3,182
Total liabilities	34,336	59,496	47,210	(25,160)	12,286
Deferred inflows of resources:					
Related to pensions	34,477	988	4,335	33,489	(3,347)
Other post-employment benefits	2,734	2,085	1,195	649	890
Total deferred inflows of resources	37,211	3,073	5,530	34,138	(2,457)
Net position:					
Net investment in capital assets	201,007	177,481	160,782	23,526	16,699
Restricted for capital projects	—	—	6,513	—	(6,513)
Unrestricted	48,173	47,180	43,740	993	3,440
Total net position	$ 249,180	224,661	211,035	24,519	13,626

*Restated per Governmental Accounting Standards Board (GASB) Statement No. 87, *Leases*.

(Dollars in thousands, unless otherwise stated)

Table 1C - Hetchy Power
Comparative Condensed Net Position
June 30, 2022, 2021, and 2020

	2022	Restated 2021*	2020	2022-2021 Change	2021-2020 Change
Total assets:					
Current and other assets	$ 260,560	249,365	228,845 **	11,195	20,520
Capital assets, net of accumulated depreciation and amortization	585,636	492,056	445,429	93,580	46,627
Total assets	846,196	741,421	674,274	104,775	67,147
Deferred outflows of resources:					
Pensions	8,183	9,531	9,716	(1,348)	(185)
Other post-employment benefits	3,999	4,552	2,850	(553)	1,702
Total deferred outflows of resources	12,182	14,083	12,566	(1,901)	1,517
Liabilities:					
Current liabilities:					
Bonds	1,966	1,928	2,115	38	(187)
Certificates of participation	427	405	384	22	21
Commercial paper	40,019	114,671	63,535	(74,652)	51,136
Other liabilities	48,549	49,450	33,218	(901)	16,232
Subtotal current liabilities	90,961	166,454	99,252	(75,493)	67,202
Long-term liabilities:					
Bonds	192,520	44,384	47,693	148,136	(3,309)
Certificates of participation	12,593	13,026	13,444	(433)	(418)
Other liabilities	22,646	55,425	54,085	(32,779)	1,340
Subtotal long-term liabilities	227,759	112,835	115,222	114,924	(2,387)
Total liabilities:					
Bonds	194,486	46,312	49,808	148,174	(3,496)
Certificates of participation	13,020	13,431	13,828	(411)	(397)
Commercial paper	40,019	114,671	63,535	(74,652)	51,136
Other liabilities	71,195	104,875	87,303	(33,680)	17,572
Total liabilities	318,720	279,289	214,474	39,431	64,815
Deferred inflows of resources:					
Related to pensions	42,138	1,207	5,298	40,931	(4,091)
Other post-employment benefits	3,342	2,548	1,461	794	1,087
Total deferred inflows of resources	45,480	3,755	6,759	41,725	(3,004)
Net position:					
Net investment in capital assets	352,162	323,066	322,204	29,096	862
Restricted for debt service	140	99	142	41	(43)
Unrestricted	141,876	149,295	143,261	(7,419)	6,034
Total net position	$ 494,178	472,460	465,607	21,718	6,853

*Restated per Governmental Accounting Standards Board (GASB) Statement No. 87, *Leases*.

**Included $1,800 working capital loan to CleanPowerSF in fiscal year 2020.

(Dollars in thousands, unless otherwise stated)

Table 1D - CleanPowerSF
Comparative Condensed Net Position
June 30, 2022, 2021, and 2020

	2022	Restated 2021*	2020	2022-2021 Change	2021-2020 Change
Total assets:					
Current and other assets	$ 129,847	121,917	121,879	7,930	38
Total assets	129,847	121,917	121,879	7,930	38
Deferred outflows of resources:					
Pensions	852	803	572	49	231
Other post-employment benefits	798	442	270	356	172
Total deferred outflows of resources	1,650	1,245	842	405	403
Liabilities:					
Current liabilities	28,621	17,735	24,991 **	10,886	(7,256)
Long-term liabilities	11,548	15,344	4,171	(3,796)	11,173
Total liabilities	40,169	33,079	29,162	7,090	3,917
Deferred inflows of resources:					
Related to pensions	5,414	1,093	1,210	4,321	(117)
Other post-employment benefits	1,594	1,913	1,211	(319)	702
Total deferred inflows of resources	7,008	3,006	2,421	4,002	585
Net position:					
Unrestricted	84,320	87,077	91,138	(2,757)	(4,061)
Total net position	$ 84,320	87,077	91,138	(2,757)	(4,061)

*Restated per Governmental Accounting Standards Board (GASB) Statement No. 87, *Leases*.

**Included $1,800 working capital loan from Hetchy Power in fiscal year 2020.

Net Position, Fiscal Year 2022

Hetch Hetchy

Hetch Hetchy's net position of $827,678 increased by $43,480 or 5.5% from prior year resulting from a net increase of $144,706 in total assets and deferred outflows of resources, offset by an increase of $101,226 in total liabilities and deferred inflows of resources (see Table 1A). Current and other assets were $500,159, a $30,652 or 6.5% increase from prior year, mainly due to net pension assets recognized in current year based on actuarial reports. Hetch Hetchy adopted GASB Statement No. 87, *Leases* and recognized right-to-use assets net of accumulated amortization of $364 and $369 in lease liabilities as of June 30, 2022. See Note 9 for additional information about the leases.

Capital assets, net of accumulated depreciation and amortization, increased by $117,106 or 17.5% to $786,643 primarily from construction and capital improvement activities for the Bay Corridor Project and the Mountain Tunnel Improvement Project. Deferred outflows of resources decreased by $3,052 due to decreases of $2,402 in pensions and $650 in other post-employment benefits (OPEB) based on actuarial reports.

Total liabilities increased by $21,361 or 5.7% to $393,225. The increases included $73,111 in outstanding debt mainly from Power 2021 Series AB revenue bonds and commercial paper issuances offset by a decrease of $51,750 in other liabilities. Deferred inflows of resources increased by $79,865 due to increases of $78,741 in relation to pensions and $1,124 in OPEB based on actuarial reports.

Hetchy Water

Hetchy Water's net position of $249,180 increased by $24,519 or 10.9% resulting from a net increase of $33,497 in total assets and deferred outflows of resources, offset by a net increase of $8,978 in total liabilities and deferred inflows of resources (see Table 1B). The increase of $11,527 in current and other assets was attributed to increases of $13,912 in net pension assets based on actuarial report, $33 in charges for services receivables due to higher consumption from Lawrence Livermore National Laboratory, $19 in interest receivables due to higher interest accrual from City's Treasury, and $8 in inventory due to more purchases than issuances during the fiscal year. The increases were offset by decreases of $2,173 in cash and investment with City Treasury mainly from higher project spending, $192 in prepaid charges, advances, and other receivables mainly due to prepayment to Turlock Irrigation District for relicensing studies, $67 decrease in due from other governments related to State grant reimbursement received for Lower Cherry Aqueduct project, and $13 decrease in lease right-to-use assets net of accumulated amortization per implementation of GASB Statement No. 87, *Leases*.

Capital assets, net of accumulated depreciation and amortization, increased by $23,526 or 13.3% to $201,007 primarily from construction and capital improvement activities for the Mountain Tunnel Improvement Project and San Joaquin Pipeline Valve and Safe Entry Improvement Project. Deferred outflows of resources decreased by $1,556 due to decreases of $1,103 in pensions and $453 in other post-employment benefits (OPEB) based on actuarial reports.

Hetchy Water's total liabilities decreased by $25,160 or 42.3% to $34,336, as explained by decreases of $26,645 in net pension liability based on actuarial estimates, $2,733 in restricted payables to vendors and contractors mainly due to lower year-end expense accruals for capital projects, $204 in OPEB obligations based on actuarial assumptions, $16 in lease liability per implementation of GASB Statement No. 87, *Leases*, and $6 in grant advance due to recognition of prior year State grant for the Rim Fire project. These decreases were offset by increases of $4,192 in unrestricted payables mainly for license and permit fees to National Park Service, $148 in employee related benefits mainly due to increase in workers' compensation, $102 in general liability based on actuarial estimates, and $2 increase in rental deposits and prepaid rent.

Deferred inflows of resources increased by $34,138 due to increases of $33,489 in relation to pensions and $649 in OPEB based on actuarial reports.

Hetchy Power

Hetchy Power's net position of $494,178 increased by $21,718 or 4.6% resulting from a net increase of $102,874 in total assets and deferred outflows of resources, offset by an increase of $81,156 in total liabilities and deferred inflows of resources (see Table 1C). Increase of $11,195 in current and other assets was attributed to increases of $17,004 in net pension assets based on actuarial report, $7,882 in prepaid charges, advances, and other receivables mainly due to collateral paid to satisfy the CAISO's financial security requirements, $3,295 in cash and investments mainly due to higher collections from billings, $76 in interest receivables due to higher interest accrual from City's Treasury, and $31 increase in Federal grants receivable mainly from the Rim Fire Project.

These increases were offset by decreases of $8,835 in charges for services receivables due to completion of billing system implementation in prior year resulting in more timely billings in current year, $7,497 in restricted interest and other receivables mainly due to decrease in vendor prepayment to PG&E for the Bay Corridor Project, $602 in due from other City departments mainly from repayment for Sustainable Energy Account, $142 in inventory due to more issuances than purchases during the fiscal year, and $17 decrease in lease right-to-use assets net of accumulated amortization per implementation of GASB Statement No. 87, *Leases*.

Capital assets, net of accumulated depreciation and amortization, increased by $93,580 or 19.0% to $585,636 primarily from construction and capital improvement activities for the Bay Corridor Project and

Mountain Tunnel Improvement Project. Deferred outflows of resources decreased by $1,901 due to decreases of $1,348 in pensions and $553 in OPEB based on actuarial reports.

Hetchy Power's total liabilities of $318,720 increased by $39,431 or 14.1%. As of June 30, 2022, outstanding debt increased by $73,111 due to $124,000 from 2021 Series AB revenue bond issuances, $63,058 from commercial paper issuance for Hetchy Power facilities, and $27,022 in bond premium from 2021 Series AB revenue bonds, offset by $140,043 in commercial paper, bonds, and certificates of participation principal repayments, and $926 in amortization of premium and discount. Other liabilities of $71,195, such as payables to vendors, employees, contractors, and other government agencies for goods and services under contractual agreements, decreased by $33,680 or 32.1%, mainly due to decreases of $32,566 in net pension liability based on actuarial estimates, $6,241 in unrestricted payables mainly from prior year wheeling charges to APX, Inc., $248 in OPEB obligations based on actuarial assumptions, $85 in general liability based on actuarial estimates, and $19 decrease in lease liability per implementation of GASB Statement No. 87, *Leases*. These decreases were offset by increases of $3,666 in restricted payables to vendors and contractors due to higher year-end expense accruals for capital projects, $868 increase in interest payable related to 2021 Series AB revenue bond issuances, $734 in unearned revenues, refunds, and other, $200 in employee related benefits mainly due to increase in workers' compensation, and $11 in due to Department of Public Works for painting of light poles. Increase of $734 in unearned revenues, refunds, and other was mainly due to increases of $458 in deposits from custom work projects, $267 in prepayments from Distributed Antenna System (DAS) program, and $60 in overpayments received from customers, offset by decreases of $48 in grant advance due to recognition of Rim Fire State grant revenue and $3 in deposits received from retail customers.

Deferred inflows of resources increased by $41,725 due to increases of $40,931 in relation to pensions and $794 in OPEB based on actuarial reports.

CleanPowerSF

CleanPowerSF's net position of $84,320 decreased by $2,757 or 3.2%, resulting from an increase of $11,092 in total liabilities and deferred inflows of resources, offset by an increase of $8,335 in total assets and deferred outflows of resources (see Table 1D). Increase in total assets of $7,930 was due to increases of $20,602 in prepaid expenses included $12,236 in collateral paid to satisfy the CAISO's financial security requirements, $5,914 from power purchase credits, and $2,452 in prepayments to PG&E for electricity purchases. Other increases included $20,438 in charges for services receivables due to pre-approved rate increases, $1,833 in net pension assets based on actuarial report, and $6 in interest receivable due to higher interest accrual from City's Treasury. These increases were offset by decreases of $34,604 in cash and investments with City Treasury mainly attributed to volatile and increased pricing in power market and $345 decrease in lease right-to-use assets net of accumulated amortization per implementation of GASB Statement No. 87, *Leases*.

Deferred outflows of resources increased by $405 due to increases of $356 in OPEB and $49 in pensions based on actuarial reports.

Total liabilities increased by $7,090 or 21.4% to $40,169, mainly explained by $7,667 increase in payables to suppliers for power purchases, $3,168 increase in unearned revenues, refunds, and other due to $2,676 grants received in advance from California Public Utilities Commission (CPUC) for the new Disadvantaged Communities Programs (DAC) and the Community Food Service Energy Efficiency program, $503 from net energy metering credits to retail and commercial customers, offset by a decrease of $11 from customer prepayments. Other increases included $228 for employee related benefits including vacation sick leave and accrued payroll mainly due to an extra day in current year-end payroll accrual when compared to prior year and $26 in general liability based on actuarial estimates. The increases were offset by decreases of $3,008 in net pension liability based on actuarial estimates, $645 in OPEB obligations based on actuarial assumptions, and $346 decrease in lease liability and interest payable per implementation of GASB Statement No. 87, *Leases*.

Deferred inflows of resources increased by $4,002 due to an increase of $4,321 in relation to pensions, offset by a decrease of $319 in OPEB based on actuarial reports.

Net Position, Fiscal Year 2021

Hetch Hetchy

Hetch Hetchy's net position of $784,209 increased by $16,429 or 2.1% from prior year resulting from an increase of $93,621 in total assets and deferred outflows of resources, offset by a net increase of $77,192 in total liabilities and deferred inflows of resources (see Table 1A). Current and other assets were $468,768, a $27,133 or 6.1% increase from prior year, driven by higher charges for services receivables from Hetchy Power. In April 2021, Hetchy Power implemented a new electric utility billing system causing billings from April to June to be delayed.

Capital assets, net of accumulated depreciation and amortization, increased by $63,326 or 10.4% to $669,537 primarily from construction and capital improvement activities, and additions of facilities, improvements, machinery, and equipment for the Bay Corridor Project and Holm Powerhouse Rehabilitation & Kirkwood Powerhouse Oil Containment Upgrades. Deferred outflows of resources increased by $3,162 due to an increase of $3,267 in other post-employment benefits (OPEB) based on actuarial reports offset by a decrease of $105 in pensions.

Total liabilities increased by $82,068 or 28.4% to $371,114. The increases included $47,243 in outstanding debt and $34,825 in other liabilities. Deferred inflows of resources decreased by $4,876 due to a decrease of $7,555 in relation to pensions offset by an increase of $2,679 in OPEB based on actuarial reports.

Hetchy Water

Hetchy Water's net position of $224,665 increased by $13,630 or 6.5% resulting from an increase of $23,381 in total assets and deferred outflows of resources, offset by a net increase of $9,751 in total liabilities and deferred inflows of resources (see Table 1B). The increase of $5,440 in current and other assets was attributed to increases of $7,423 in cash and investment with City Treasury mainly due to a $16,000 transfer from the Water Enterprise to fund upcountry projects, offset by higher project spending, $413 increase in charges for services receivables due to higher consumption from Lawrence Livermore National Laboratory, and $4 increase in inventory due to more purchases than issuances during the fiscal year. The increases were offset by decreases of $1,996 in due from other governments mainly due to prior year reimbursements received for disaster emergency recoveries related to the 2018 Moccasin Storm and $186 in interest receivables due to lower annualized interest rate. Prepaid charges, advances, and other receivables decreased by $114 due to $448 Rim Fire insurance recovery collections and $4 in amortization of the advance paid to the Recreation and Parks Department for the Civic Center Garage, offset by an increase of $338 in vendor prepayment to Turlock Irrigation District for Federal Energy Regulatory Commission (FERC) relicensing studies and California Department of Water Resources for annual dam fees. Other decreases include $104 due from the City Attorney's Office for legal services.

Capital assets, net of accumulated depreciation and amortization, increased by $16,699 or 10.4% to $177,481 primarily from construction and capital improvement activities for the Mountain Tunnel Improvement Project and Repair & Replacement Life Extension Program, and additions of facilities, improvements, machinery, and equipment. Deferred outflows of resources increased by $1,242 due to an increase of $1,393 in OPEB based on actuarial reports offset by a decrease of $151 in pensions.

Hetchy Water's total liabilities increased by $12,208 or 25.9% to $59,418, as explained by increases of $5,778 in restricted payables to vendors and contractors mainly due to higher year-end expense accruals for capital projects, $5,168 in net pension liability based on actuarial report, $3,304 in unrestricted payables mainly for license and permit fees to National Park Service, $626 in employee related benefits including workers' compensation, vacation, sick leave and accrued payroll mainly due to an extra day in current year-end payroll accrual when compared to prior year and a 3% cost of living adjustment increase in December 2020, and $4 increase in rental deposits. The increases were offset by decreases of $1,906 in OPEB obligations based on actuarial assumptions, $493 in grant advance due to recognition of Rim Fire grant revenue, $240 in payable due to the City Attorney's Office for unbilled legal services, and $33 in general liability based on actuarial estimates.

Deferred inflows of resources decreased by $2,457 due to a decrease of $3,347 in relation to pensions offset by an increase of $890 in OPEB based on actuarial reports.

Hetchy Power

Hetchy Power's net position of $472,464 increased by $6,857 or 1.5% resulting from an increase of $68,574 in total assets and deferred outflows of resources, offset by a net increase of $61,717 in total liabilities and deferred inflows of resources (see Table 1C). Increase of $20,430 in current and other assets was attributed to an increase of $16,057 in charges for services receivables, of which $15,673 was attributed to billing delays as a result of transitioning to new billing system implemented in April 2021. In addition, there was an increase of $1,051 in year-end accrual for California Independent System Operator (CAISO) Congestion Revenue Right (CRR) credits, offset by an increase of $667 in allowance for doubtful accounts due to increased past due balances as a result of the Mayor's emergency proclamation that Hetchy Power temporarily suspend collection procedures and utility shutoffs for past due accounts to help customers with financial hardship due to COVID-19. Restricted interest and other receivables increased by $11,632 mainly due to vendor prepayment to PG&E for the Bay Corridor Project.

Prepaid charges, advances, and other receivables increased by $405 mainly due to $496 increase in vendor prepayments to PG&E for electric system reliability compliance product offset by decreases of $61 in receivables for the Distributed Antenna System (DAS) program due to more payments received, $16 in custom work receivables for Sunnydale Housing Projects, and $14 in amortization of the advance paid to the Recreation and Parks Department for the Civic Center Garage. Inventory increased by $211 due to more purchases than issuances during the fiscal year. The increases were offset by $3,280 decrease in cash and investment with/outside City Treasury due primarily to increase in capital spending. Due from other City departments decreased by $2,763, attributed to the final repayments of $1,800 from CleanPowerSF for working capital loan, $506 for the Sustainable Energy Account, $331 from City Attorney's Office for legal services, $109 from Wastewater Enterprise for the Living Machine System, and $105 from the Recreation and Parks Department for Energy Efficiency Projects, offset by increases of $46 in interest receivable from Treasure Island Development Authority (TIDA) in connection of an upgraded submarine power cable for the Treasure Island to increase service capacity and $42 from the Department of Public Works for Hunters Point Shipyard Development and Transbay Folsom Street Improvement custom work projects. Other decreases include $1,377 in grants receivable due to reimbursement received for disaster emergency recoveries related to the Rim Fire and 2018 Moccasin Storm, and $455 in interest receivables due to lower annualized interest rate.

Capital assets, net of accumulated depreciation and amortization, increased by $46,627 or 10.5% to $492,056 primarily due to additions of facilities, improvements, machinery, and equipment for the Bay Corridor Project and Holm Powerhouse Rehabilitation & Kirkwood Powerhouse Oil Containment Upgrades. Deferred outflows of resources increased by $1,517 due to an increase of $1,702 in OPEB based on actuarial reports offset by a decrease of $185 in pensions.

Hetchy Power's total liabilities of $279,195 increased by $64,721 or 30.2%. As of June 30, 2021, outstanding debts increased by $47,243 and was attributable to $51,136 in commercial paper issuance for Hetchy Power facilities, offset by $2,402 in bonds and certificates of participation principal repayments, $1,272 in return of unspent bond proceeds for 2015 NCREBs, and $219 in amortization of premium and discount. Other liabilities of $104,781, such as payables to vendors, employees, contractors, and other government agencies for goods and services under contractual agreements, increased by $17,478 or 20.0%, mainly due to increases of $8,724 in unrestricted payables mainly for wheeling charges to APX Inc., $6,934 restricted payables to vendors and contractors due to higher year-end expense accruals for capital projects, $6,317 in net pension liability based on actuarial report, and $876 in employee related benefits including workers' compensation, vacation, sick leave and accrued payroll mainly due to an extra day in current year-end payroll accrual when compared to prior year and a 3% cost of living adjustment increase in December 2020. Offsetting decreases include $2,330 in OPEB obligations based on actuarial assumptions, $1,649 in unearned revenue, $1,114 in general liability based on actuarial estimates, $231 in due to City Attorney's Office for unbilled legal services, and $49 in interest payable as a result of decreased outstanding debts and lower interest rates for commercial paper. Unearned revenue decreased by $1,649 due to $1,208 in remittance of utility tax collected, $1,193 in power revenue from commercial deposits, $681 in residential allowance refund for the Alice Griffith Housing Project, and $609 in recognition of Rim Fire grants revenue received in advance, offset by increases of $1,707 in deposits from custom work projects, $200 in prepayments from DAS program, $117 in overpayments received from customers, and $18 in deposits received from retail customers and security deposits for cottage rental.

Deferred inflows of resources decreased by $3,004 due to a decrease of $4,091 in relation to pensions offset by an increase of $1,087 in OPEB based on actuarial reports.

CleanPowerSF

CleanPowerSF's net position of $87,080 decreased by $4,058 or 4.5%, resulting from a net decrease of $134 in total assets and deferred outflows of resources and a net increase of $3,924 in total liabilities and deferred inflows of resources (see Table 1D). Total assets decreased by $537 due to a $6,447 decrease in charges for services receivables attributed to an increase of $3,675 in allowance for doubtful accounts due to higher past due balances in customer power utility accounts after the Mayor's proclamation to extend the moratorium on utility shutoffs and bill collections to help customers experiencing financial hardship as a result of COVID-19. Other decreases include $2,772 in receivables mainly due to one-time customer assistance bill credits related to COVID-19 relief, $576 in prepaid charges, advances, and other receivables mainly due to lower vendor prepayments for purchased electricity and $160 in interest receivables due to lower annualized interest rate. The decreases were offset by an increase of $6,646 in cash and investment with City Treasury mainly from cash collateral received for power purchase agreement.

Deferred outflows of resources increased by $403 due to increases of $231 in pensions and $172 in OPEB based on actuarial reports.

(Dollars in thousands, unless otherwise stated)

Total liabilities of $32,501 increased by $3,339 or 11.4%, which was mainly explained by $9,000 in cash collateral received for power purchase agreement (see Note 14(a)), $1,203 in net pension liability based on actuarial report, $712 in OPEB obligations based on actuarial assumptions, and an increase of $200 in employee related benefits including vacation, sick leave and accrued payroll mainly due to an extra day in current year-end payroll accrual when compared to prior year, and a 3% cost of living adjustment increase in December 2020. Other increases in unearned revenues, refunds, and other, include $90 from net energy metering credits to retail and commercial customers, $86 from customer prepayments, and $4 from utility and electric energy surcharge tax payable. These increases were offset by decreases of $6,047 in payables to vendors and contractors mainly from lower power purchases, $1,809 due to other City departments ($1,800 final working capital loan repayment to Hetchy Power and $9 to City Attorney's Office for unbilled legal services), and $100 in general liability based on actuarial estimates.

Deferred inflows of resources increased by $585 due to an increase of $702 in OPEB based on actuarial reports offset by a decrease of $117 in relation to pensions.

Results of Operations

The following tables summarize Hetch Hetchy's revenues, expenses, and changes in net position:

Table 2A - Consolidated Hetch Hetchy
Comparative Condensed Revenues, Expenses, and Changes in Net Position
Years Ended June 30, 2022, 2021, and 2020

		2022	Restated 2021*	2020	2022-2021 Change	2021-2020 Change
Revenues:						
Charges for services	$	480,198	390,924	420,937	89,274	(30,013)
Rents and concessions		249	247	347	2	(100)
Interest and investment income (loss)		(8,219)	(157)	9,449	(8,062)	(9,606)
Other non-operating revenues		19,001	21,552	28,868	(2,551)	(7,316)
Total revenues		491,229	412,566	459,601	78,663	(47,035)
Expenses:						
Operating expenses		470,768	408,870	389,026	61,898	19,844
Interest expenses		5,630	2,000	2,809	3,630	(809)
Amortization of premium, discount, and issuance costs		192	(219)	(228)	411	9
Non-operating expenses		628	965	1,071	(337)	(106)
Total expenses		477,218	411,616	392,678	65,602	18,938
Change in net position before transfers		14,011	950	66,923	13,061	(65,973)
Transfers from the City and County of San Francisco		30,001	16,000	14,000	14,001	2,000
Transfers to the City and County of San Francisco		(532)	(532)	(32)	—	(500)
Net transfers		29,469	15,468	13,968	14,001	1,500
Change in net position		43,480	16,418	80,891	27,062	(64,473)
Net position at beginning of year		784,198	767,780	686,889	16,418	80,891
Net position at end of year	$	827,678	784,198	767,780	43,480	16,418

*Restated per Governmental Accounting Standards Board (GASB) Statement No. 87, *Leases*.

(Dollars in thousands, unless otherwise stated)

Table 2B - Hetchy Water
Comparative Condensed Revenues, Expenses, and Changes in Net Position
Years Ended June 30, 2022, 2021, and 2020

		2022	Restated 2021*	2020	2022-2021 Change	2021-2020 Change
Revenues:						
Charges for services	$	49,200	46,979	34,797	2,221	12,182
Rents and concessions		112	111	156	1	(45)
Interest and investment income (loss)		(2,932)	(232)	1,932	(2,700)	(2,164)
Other non-operating revenues		479	1,352	3,861	(873)	(2,509)
Total revenues		46,859	48,210	40,746	(1,351)	7,464
Expenses:						
Operating expenses		52,303	50,519	44,873	1,784	5,646
Interest expenses		1	2	—	(1)	2
Non-operating expenses		37	63	11	(26)	52
Total expenses		52,341	50,584	44,884	1,757	5,700
Change in net position before transfers		(5,482)	(2,374)	(4,138)	(3,108)	1,764
Transfers from the City and County of San Francisco		30,001	16,000	14,000	14,001	2,000
Change in net position		24,519	13,626	9,862	10,893	3,764
Net position at beginning of year		224,661	211,035	201,173	13,626	9,862
Net position at end of year	$	249,180	224,661	211,035	24,519	13,626

*Restated per Governmental Accounting Standards Board (GASB) Statement No. 87, *Leases*.

Table 2C - Hetchy Power
Comparative Condensed Revenues, Expenses, and Changes in Net Position
Years Ended June 30, 2022, 2021, and 2020

		2022	Restated 2021*	2020	2022-2021 Change	2021-2020 Change
Revenues:						
Charges for services	$	173,105	136,247	140,680	36,858	(4,433)
Rents and concessions		137	136	191	1	(55)
Interest and investment income (loss)		(4,001)	24	5,746	(4,025)	(5,722)
Other non-operating revenues		15,763	19,273	25,006	(3,510)	(5,733)
Total revenues		185,004	155,680	171,623	29,324	(15,943)
Expenses:						
Operating expenses		156,347	145,640	148,127	10,707	(2,487)
Interest expenses		5,624	1,972	2,740	3,652	(768)
Amortization of premium, discount, and issuance costs		192	(219)	(228)	411	9
Non-operating expenses		591	902	1,060	(311)	(158)
Total expenses		162,754	148,295	151,699	14,459	(3,404)
Change in net position before transfers		22,250	7,385	19,924	14,865	(12,539)
Transfers to the City and County of San Francisco		(532)	(532)	(32)	—	(500)
Change in net position		21,718	6,853	19,892	14,865	(13,039)
Net position at beginning of year		472,460	465,607	445,715	6,853	19,892
Net position at end of year	$	494,178	472,460	465,607	21,718	6,853

*Restated per Governmental Accounting Standards Board (GASB) Statement No. 87, *Leases*.

(Dollars in thousands, unless otherwise stated)

Table 2D - CleanPowerSF
Comparative Condensed Revenues, Expenses, and Changes in Net Position
Years Ended June 30, 2022, 2021, and 2020

		2022	Restated 2021*	2020	2022-2021 Change	2021-2020 Change
Revenues:						
Charges for services	$	257,893	207,698	245,460	50,195	(37,762)
Interest and investment income (loss)		(1,286)	51	1,771	(1,337)	(1,720)
Other non-operating revenues		2,759	927	1	1,832	926
Total revenues		259,366	208,676	247,232	50,690	(38,556)
Expenses:						
Operating expenses		262,118	212,711	196,026	49,407	16,685
Interest expenses		5	26	69	(21)	(43)
Total expenses		262,123	212,737	196,095	49,386	16,642
Change in net position		(2,757)	(4,061)	51,137	1,304	(55,198)
Net position at beginning of year		87,077	91,138	40,001	(4,061)	51,137
Net position at end of year	$	84,320	87,077	91,138	(2,757)	(4,061)

*Restated per Governmental Accounting Standards Board (GASB) Statement No. 87, *Leases*.

Result of Operations, Fiscal Year 2022

Hetch Hetchy

Hetch Hetchy's total revenues were $491,229, an increase of $78,663 or 19.1% over prior year (see Table 2A). Charges for services increased by $89,274 or 22.8% from prior year's revenues mainly due to higher billings from CleanPowerSF and Hetchy Power. Total expenses increased by $65,602 or 15.9% primarily from higher energy purchases due to volatile and increased pricing in power market. (See Table 2A).

Hetchy Water

Hetchy Water's total revenues were $46,859, a decrease of $1,351 or 2.8% from prior year's revenues (see Table 2B). Decrease was due to $2,700 in investment loss and a decrease of $873 from other non-operating revenues, offset by increases of $2,221 from charges for services and $1 from rents and concessions.

Charges for services were $49,200, an increase of $2,221 or 4.7% mainly due to increased water assessment fees from the Water Enterprise to fund upcountry water-related costs and higher consumption from Lawrence Livermore National Laboratory. Rents were $112, an increase of $1 or 0.9% mainly due to consumer price index adjustment. Interest and investment loss was $2,932 mainly due to unrealized losses as a result of the decline in market value of investments related to rising interest rates. Other non-operating revenues were $479, a decrease of $873 or 64.6% mainly due to $899 lower Federal and State grants revenue from the Rim Fire Projects, offset by increases of $19 in overhead charges and $7 in net gain from sale of fixed assets.

Total operating expenses, excluding interest expenses and other non-operating expenses, were $52,303, an increase of $1,784 or 3.5%. The increase was primarily due to increases of $4,275 in other operating expenses mainly due to higher capital spending, $612 in services provided by other departments mainly due to higher legal service charges from City Attorney's Office, $456 in contractual services mainly from increased engineering and management consulting services, $309 in general and administrative expenses mainly due to higher fees, licenses, and permit expenses, $277 in depreciation and amortization mainly related to additional building, structure and equipment placed in service, and $90 in material and supplies mainly from fuel and water treatment supplies. These increases were offset by a decrease of $4,235 in personnel services due to lower pension obligations based on actuarial reports.

Other non-operating expenses were $37, a decrease of $26 due to lower payments to community-based organization programs. Interest expenses were $1, a decrease of $1 due to implementation of GASB Statement No. 87, *Leases*. A transfer in of $30,001 was received from the Water Enterprise to fund various Mountain Tunnel projects.

As a result of the above activities, net position for the year ended June 30, 2022 increased by $24,519 or 10.9% compared to prior year.

Hetchy Power

Hetchy Power's total revenues were $185,004, an increase of $29,324 or 18.8% from prior year's revenues (see Table 2C). Increases included $36,858 from charges for services and $1 from rents and concessions, offset by decreases of $4,025 from interest and investment income and $3,510 from other non-operating revenues.

Charges for services were $173,105, an increase of $36,858 or 27.1%, due to $22,537 in billings from City departments such as San Francisco International Airport, Municipal Transportation Agency, and Port of San Francisco as a result of increased operation due to easing of COVID-19 restrictions and $14,980 in Congestion Revenue Right (CRR) credits from California Independent System Operator (CAISO), offset by a decrease of $659 in resale of capacity to CleanPowerSF. Rents increased slightly by $1 or 0.7% to $137 mainly due to consumer price index adjustment. Interest and investment loss was $4,001, a decrease of $4,025, mainly due to unrealized losses as a result of the decline in market value of investments related to rising interest rates.

Other non-operating revenues were $15,763, a decrease of $3,510 or 18.2%, mainly due to lower collections of $3,254 from the Power System Mitigation Project, $1,371 in Cap and Trade revenue due to decrease of 97,000 allowances or 80% sold, $1,194 in revenue from Alice Griffith Housing Project due to prior year recognition of commercial deposits, $797 in settlement revenue from prior year litigation settlement, and $335 in overhead charges, offset by an increase of $3,441 in State and Federal grants revenue from Rim Fire Project and California Utility Arrearages Relief Payment Program for unpaid bills.

Total operating expenses, excluding interest expenses, other non-operating expenses, and amortization of premium, discount, and issuance costs, increased by $10,707 or 7.4%, to $156,347. The increase was primarily due to increases of $15,559 in purchased electricity and transmission, distribution, and other power costs due to volatile and increased pricing in power market, $1,978 in depreciation and amortization mainly for buildings, facilities, machinery, and equipment related to higher capitalization of assets, $899 in contractual services mainly for management consulting and engineering services, $280 in materials and supplies mainly for electrical supplies and tools, and $116 in services provided by other departments mainly due to higher risk management costs. The increases were offset by decreases of $6,110 in personnel services due to lower pension obligations based on actuarial reports, $1,420 in general and administrative expenses mainly due to lower judgements and claims expenses, and $595 decrease in other operating expenses mainly due to higher capitalized project expenses.

Interest expenses increased by $3,652 or 185.2% mainly due to no bond interest capitalization recognized in current year resulting from the implementation of GASB Statement No. 89, *Accounting for Interest Cost Incurred Before the End of a Construction Period*. Amortization of premium and discount increased by $411 or 187.7% mainly due to costs of issuance for 2021 Series AB revenue bond.

Other non-operating expenses were $591, a decrease of $311 or 34.5% mainly due to lower payments for GoSolarSF Incentive Program. Transfer out of $532 includes $500 to General Fund for repayment of Educational Revenue Augmentation Funds and $32 to the Office of the City's Administrator for the Surety Bond Program.

As a result of the above activities, net position for the year ended June 30, 2022 increased by $21,718 or 4.6% compared to prior year.

CleanPowerSF

CleanPowerSF's total revenues were $259,366, a $50,690 or 24.3% increase over prior year (see Table 2D). Charges for services increased by $50,195 or 24.2% mainly due to increases of $44,215 in electricity sales to retail and commercial customers resulting from a 16% average rate increase, $2,831 reduction in allowance for doubtful accounts attributed to assistance received from California Utility Arrearages Relief Payment Program (CAPP) for eligible customer account arrearages, $2,817 in one-time customer assistance bill credit related to COVID-19 in prior year, and $332 from higher capacity sales to Hetchy Power. Other non-operating revenue increased by $1,832 mainly due to $2,424 Federal grants received from CAPP, offset by a decrease of $592 liquidated damage compensation received from supplier for delay of the Renewable Energy Project in prior year. Interest and investment loss was $1,286 as a result of the decline in market value of investments related to rising interest rates.

Total operating expenses, excluding interest expenses were $262,118, an increase of $49,407 or 23.2% from prior year. The increase was due to $48,749 in purchased electricity and transmission, distribution, and other power costs due to volatile and increased pricing in power market, and higher resource adequacy capacity purchases related to compliance requirements from the California Public Utilities Commission. Other operating expenses increased by $2,895 due to $2,424 grant expense recognized for CAPP when applied to customer account arrearages and $471 in operating expenses mainly for the Neighborhood Steward Program and the new Local Renewable Energy. Other increases included $1,394 in general and administrative expenses mainly due to higher judgements and claims expenses, $143 in professional and contractual services mainly from higher software licensing fee, and $7 in material and supplies mainly for data processing equipment. These increases were offset by decreases of $3,474 in personnel services due to lower pension obligations based on actuarial reports, $307 in services provided by other departments mainly due to lower labor support from Hetchy Power. Interest expenses decreased by $21 mainly due to repayment of working capital loan to Hetchy Power completed in prior year.

As a result of the above activities, net position for the year ended June 30, 2022 decreased by $2,757 or 3.2% compared to prior year.

Result of Operations, Fiscal Year 2021

Hetch Hetchy

Hetch Hetchy's total revenues were $412,566, a decrease of $47,035 or 10.2% over prior year (see Table 2A). Charges for services decreased by $30,013 or 7.1% from prior year's revenues mainly due to lower billings from CleanPowerSF and Hetchy Power. Total expenses increased by $18,927 or 4.8% primarily due to increase in California Independent System Operator (CAISO) charges for CleanPowerSF market energy purchases (See Table 2A).

Hetchy Water

Hetchy Water's total revenues were $48,210, an increase of $7,464 or 18.3% from prior year's revenues (see Table 2B). Increase was due to $12,182 from charges for services, offset by decreases of $2,509 from other non-operating revenues, $2,164 in interest and investment income, and $45 from rents and concessions.

Charges for services were $46,979, an increase of $12,182 or 35.0% mainly due to increased water assessment fees from the Water Enterprise to fund upcountry water-related costs and higher consumption from Lawrence Livermore National Laboratory. Rents were $111, a decrease of $45 or 28.8% mainly from lower cottage rental revenue. Other non-operating revenues were $1,352, a decrease of $2,509 or 65.0% mainly due to decreases of $1,510 in Federal and State grants revenue resulting from lower collections from State grants related to 2018 Moccasin Storm, $995 from prior year Rim Fire recoveries, and $4 in net gain from sale of fixed assets. Interest and investment loss was $232 mainly due to unrealized loss attributed to decrease in market value in cash and investments with City Treasury and lower interest rates.

Total operating expenses, excluding other non-operating expenses, were $50,517, an increase of $5,644 or 12.6%. The increase was attributed to $3,567 in personnel services resulting from cost of living adjustments, higher retirement contribution rates, and increased personnel and fringe benefit costs. Other increases include $773 in contractual services mainly from increased engineering and management consulting services, $733 in depreciation and amortization related to additional building, structure and equipment placed in service, $664 in services provided by other departments mainly due to higher bureau support costs and legal service charges from City Attorney's Office, and $162 in other operating expenses mainly due to higher capital spending. These increases were offset by decreases of $190 in general and administrative expenses mainly due to lower judgements and claims expenses and $65 decrease in materials and supplies mainly for water and sewage treatment supplies.

Other non-operating expenses were $63, an increase of $52 due to payments to community-based organization programs. A transfer in of $16,000 was received from the Water Enterprise to fund upcountry projects.

As a result of the above activities, net position for the year ended June 30, 2021 increased by $13,630 or 6.5% compared to prior year.

Hetchy Power

Hetchy Power's total revenues were $155,680, a decrease of $15,943 or 9.3% from prior year's revenues (see Table 2C). Decreases included $5,733 from other non-operating revenues, $5,722 from interest and investment income, $4,433 from charges for services, and $55 from rents and concessions.

Charges for services were $136,247, a decrease of $4,433 or 3.2% was attributed to a decrease of $8,362 in sales to City departments, wholesale, and Treasure Island customers due to COVID-19 related impacts and $667 increase in allowance for doubtful accounts. Receivables aging over 120 days increased significantly due to the suspension of collection efforts and moratorium on utility shutoffs in response to the COVID-19 emergency proclamation issued by the Mayor. The decrease was offset by increases of $2,537 in sales to retail customers mainly due to new affordable redevelopment housing accounts and $2,059 in resale of capacity to CleanPowerSF due to excess capacity of electric system reliability compliance product. Rents were $136, a decrease of $55 or 28.8% mainly due to lower cottage rental revenue. Interest and investment income were $24, a decrease of $5,722 or 99.6% mainly due to decreases of $4,691 in interest earned from lower interest rates and cash balance, unrealized loss, and $1,031 from interest accrued for Treasure Island submarine power cable in prior year.

Other non-operating revenues were $19,273, a decrease of $5,733, or 22.9%, mainly due to decreases of $5,739 from Low Carbon Fuel Standard (LCFS) credit sales revenue, attributed to less carbon fuel credit generated by San Francisco Municipal Transportation Agency, $2,574 in license fee from Transbay Cable Project due to final payment received in prior year, $1,139 in Cap and Trade revenue due to decrease of 23,000 or 16% allowance sold, and $654 decrease in fees collected from DAS program. Other decreases include $402 in State and Federal grants revenue resulting from lower collections from State grants related to 2018 Moccasin Storm and Federal grants related to Hazard Mitigation grant, $70 in Federal interest subsidy due to lower debt outstanding, $37 in damage claims revenue, and $5 in net gain from sale of fixed assets. These decreases were offset by increases of $2,921 in collection for Power System Impact Mitigation Project, $797 in settlement revenue related to litigation, $736 in commercial deposits from Alice Griffith Housing Project recognized as revenue, $259 in overhead charges, and $174 in miscellaneous revenue mainly from generation interconnection study and refunds from vendor.

Total operating expenses, excluding interest expenses, other non-operating expenses, and amortization of premium, discount, and issuance costs, decreased by $2,489 or 1.7%, to $145,638. The decrease was primarily due to $6,138 in purchased electricity and transmission, distribution, and other power costs due to lower electricity sales, $289 in services provided by other departments mainly due to lower bureau support costs, $270 in material and supplies due to lower equipment maintenance, and $96 decrease in depreciation and amortization for machinery and equipment. The decreases were offset by increases of $1,704 in general and administrative expenses mainly due to higher litigation expenses, $1,572 in other operating expenses mainly due to higher capital spending, $984 in contractual services mainly from new in-city inventory warehouse rental at Pier 23 in San Francisco, and $44 in personnel services resulting from cost of living adjustments, higher retirement contribution rates, higher pension obligations based on actuarial reports, and increased personnel and fringe benefit costs.

Interest expenses were $1,970, a decrease of $770 or 28.1% due to decrease in outstanding debt and lower interest rates for commercial paper. Amortization of premium and discount slightly decreased by $9 or 3.9% to $219.

Other non-operating expenses were $902, a decrease of $158 or 14.9% mainly due to decrease in payments for GoSolarSF Incentive Program. Transfer out of $532 includes $500 to General Fund for repayment of Educational Revenue Augmentation Funds and $32 to the Office of the City's Administrator for the Surety Bond Program.

As a result of the above activities, net position for the year ended June 30, 2021 increased by $6,857 or 1.5% compared to prior year.

CleanPowerSF

CleanPowerSF's total revenues were $208,676, a $38,556 or 15.6% decrease over prior year (see Table 2D). Charges for services decreased by $37,762 or 15.4% mainly due to a decrease of $32,077 in electricity sales to retail and commercial customers resulting from consumption decrease of 92,503 MWh or 3%, a one-time customer assistance bill credit of $2,817 related to COVID-19 utility bill relief, an increase of $2,451 in allowance for doubtful accounts, and $417 lower capacity sales to other entities. Receivables aging over 120 days increased significantly due to the suspension of collection efforts and moratorium on utility shutoffs in response to the COVID-19 emergency proclamation issued by the Mayor. Interest and investment income decreased by $1,720 or 97.1% due to unrealized loss and lower interest rates on pooled cash and investments. Other non-operating revenue increased by $926 due to liquidated damage compensation from vendor for the delay of Renewable Energy Project.

(Dollars in thousands, unless otherwise stated)

Total operating expenses, excluding interest expenses were $212,716, an increase of $16,690 or 8.5% from prior year. The increase was due to $16,219 in purchased electricity and transmission, distribution and other power costs as a result of higher prices in the CAISO market and increase in resource adequacy capacity purchases related to new compliance requirements from the California Public Utilities Commission. Other increases include $1,200 in services provided by other departments due to increased labor support from Hetchy Power and legal service charges from City Attorney's Office, and $305 increase in other operating expenses mainly from the Neighborhood Steward Program and the new Local Renewable Energy Program. These increases were offset by decreases of $529 in professional and contractual services mainly from lower management consulting services, $279 in personnel services mainly due to lower pension obligations and OPEB based on actuarial reports, $195 in general and administrative expenses mainly due to lower judgements and claims based on actuarial estimates, and $31 in material and supplies due to reduced furnishings expenses. Interest expenses were $18, a decrease of $51 or 73.9% due to lower principal outstanding from Hetchy Power working capital loan.

As a result of the above activities, net position for the year ended June 30, 2021 decreased by $4,058 or 4.5% compared to prior year.

Capital Assets

The following tables summarize Hetch Hetchy's changes in capital assets.

Table 3A - Capital Assets, Net of Accumulated Depreciation and Amortization
As of June 30, 2022, 2021, and 2020

	2022	2021	2020	2022-2021 Change	2021-2020 Change
Hetch Hetchy					
Facilities, improvements, machinery, and equipment	$ 440,460	432,916	386,560	7,544	46,356
Intangible assets	24,472	24,932	25,393	(460)	(461)
Land and rights-of-way	5,181	5,181	5,181	—	—
Construction work in progress	316,530	206,508	189,077	110,022	17,431
Total	786,643	669,537	606,211	117,106	63,326
Hetchy Water					
Facilities, improvements, machinery, and equipment	133,263	128,335	122,433	4,928	5,902
Intangible assets	10,374	10,581	10,789	(207)	(208)
Land and rights-of-way	3,232	3,232	3,232	—	—
Construction work in progress	54,138	35,333	24,328	18,805	11,005
Total	201,007	177,481	160,782	23,526	16,699
Hetchy Power					
Facilities, improvements, machinery, and equipment	307,197	304,581	264,127	2,616	40,454
Intangible assets	14,098	14,351	14,604	(253)	(253)
Land and rights-of-way	1,949	1,949	1,949	—	—
Construction work in progress	262,392	171,175	164,749	91,217	6,426
Total	$ 585,636	492,056	445,429	93,580	46,627

(Dollars in thousands, unless otherwise stated)

Capital Assets, Fiscal Year 2022

Hetch Hetchy

Hetch Hetchy has capital assets of $786,643, net of accumulated depreciation and amortization, invested in both water and power utility capital assets as of June 30, 2022 (see Table 3A). This amount represents an increase of $117,106 or 17.5%, resulting from increases of $110,022 in construction work in progress and $7,544 in facilities, improvements, machinery and equipment, offset by a decrease of $460 in amortization of intangible assets. The investment in capital assets includes land, buildings, improvements, hydropower facilities, dams, transmission lines, machinery, and equipment.

Major additions to construction work in progress, depreciable facilities, improvements, intangible assets, machinery, and equipment placed in service, including transfers of completed projects from construction work in progress, during the year ended June 30, 2022 include the following:

Table 3B - Hetch Hetchy
Major Additions to Construction Work in Progress and
Facilities, Improvements, Intangible Assets, Machinery, and Equipment Placed in Service
Year ended June 30, 2022

	Hetchy Water	Hetchy Power	2022 Total
Bay Corridor Project	$ –	46,608	46,608
Mountain Tunnel Improvement Project	16,638	20,335	36,973
Moccasin Powerhouse Rewind	–	12,368	12,368
O'Shaughnessy Dam Access & Drainage Improvements and Outlet Works	1,733	2,118	3,851
San Joaquin Pipeline Valve & Safe Entry Improvement	2,952	–	2,952
Repair and Replacement Life Extension Program	2,776	–	2,776
Intervening Facilities	–	2,758	2,758
Pier 70	–	2,739	2,739
Van Ness - Bus Rapid Transit	–	2,423	2,423
Transmission Line Clearance Mitigation	–	1,711	1,711
Other project additions individually below $1,500	5,555	19,799	25,354
Additions to Construction Work in Progress	$ 29,654	110,859	140,513
San Joaquin Pipeline Tesla Valves and Installation	$ 4,410	–	4,410
O'Shaughnessy Dam Access & Drainage Improvements - Stairs and Fall Protection	1,931	2,360	4,291
Pier 70	–	1,720	1,720
Transmission Line Clearance Mitigation	–	1,508	1,508
Other project additions individually below $1,500	4,672	14,386	19,058
Facilities, Improvements, Intangible Assets, Machinery, and Equipment Placed in Service	$ 11,013	19,974	30,987

Hetchy Water

Hetchy Water has capital assets of $201,007, net of accumulated depreciation and amortization, invested in a broad range of utility capital assets as of June 30, 2022 (see Table 3A). This amount represents an increase of $23,526 or 13.3%, primarily due to increases of $18,805 in construction work in progress and $4,928 in facilities, improvements, machinery, and equipment, offset by a decrease of $207 in amortization of intangible assets.

For the year ended June 30, 2022, Hetchy Water's major additions to construction work in progress totaled $29,654. Major depreciable facilities, improvements, intangible assets, machinery, and equipment placed in service totaled $11,013 (see Table 3B).

Hetchy Power

Hetchy Power has capital assets of $585,636, net of accumulated depreciation and amortization, invested in utility capital assets as of June 30, 2022 (see Table 3A). This amount represents an increase of $93,580 or 19.0%, primarily due to increases of $91,217 in construction work in progress and $2,616 in facilities, improvements, machinery, and equipment, offset by a decrease of $253 in amortization of intangible assets.

For the year ended June 30, 2022, Hetchy Power's major additions to construction work in progress totaled $110,859. Major depreciable facilities, improvements, intangible assets, machinery, and equipment placed in service totaled $19,974 (see Table 3B).

CleanPowerSF

CleanPowerSF had no capital assets as of June 30, 2022 and 2021.

See Note 4 for additional information about capital assets.

Capital Assets, Fiscal Year 2021

Hetch Hetchy

Hetch Hetchy has capital assets of $669,537, net of accumulated depreciation and amortization, invested in both water and power utility capital assets as of June 30, 2021 (see Table 3A). This amount represents an increase of $63,326 or 10.4%, resulting from increases of $46,356 in facilities, improvements, machinery and equipment and $17,431 in construction work in progress, offset by a decrease of $461 in amortization of intangible assets. The investment in capital assets includes land, buildings, improvements, hydropower facilities, dams, transmission lines, machinery, and equipment.

(Dollars in thousands, unless otherwise stated)

Major additions to construction work in progress, depreciable facilities, improvements, intangible assets, machinery, and equipment placed in service, including transfers of completed projects from construction work in progress, during the year ended June 30, 2021 include the following:

Table 3C - Hetch Hetchy
Major Additions to Construction Work in Progress and
Facilities, Improvements, Intangible Assets, Machinery, and Equipment Placed in Service
Year ended June 30, 2021

	Hetchy Water	Hetchy Power	2021 Total
Bay Corridor Project	$ —	31,556	31,556
Mountain Tunnel Improvement Project	7,744	9,465	17,209
Transmission Line Clearance Mitigation & Upgrade	—	6,176	6,176
Repair & Replacement Life Extension Program	5,188	—	5,188
Moccasin Penstock Rehabilitation and Powerhouse Rewind	—	4,374	4,374
Van Ness - Bus Rapid Transit	—	2,742	2,742
Moccasin Reservoir Security Fence	2,723	—	2,723
San Joaquin Pipeline Valve & Safe Entry Improvement	2,115	—	2,115
Treasure Island Capital Improvements	—	2,025	2,025
Other project additions individually below $2,000	4,816	13,721	18,537
Additions to Construction Work in Progress	$ 22,586	70,059	92,645
Holm Powerhouse Rehabilitation & Kirkwood Powerhouse Oil Containment Upgrades	$ —	21,920	21,920
Electrical Underground Duct Bank 23rd & Illinois South Street	—	18,133	18,133
Moccasin Reservoir Security Fence	3,549	—	3,549
Switch Yard Asset	—	3,533	3,533
San Joaquin Pipeline Rehabilitation	3,243	—	3,243
San Francisco Academy Solar Carport	—	2,657	2,657
Other project additions individually below $2,000	4,911	9,585	14,496
Facilities, Improvements, Intangible Assets, Machinery, and Equipment Placed in Service	$ 11,703	55,828	67,531

Hetchy Water

Hetchy Water has capital assets of $177,481, net of accumulated depreciation and amortization, invested in a broad range of utility capital assets as of June 30, 2021 (see Table 3A). This amount represents an increase of $16,699 or 10.4%, primarily due to increases of $11,005 in construction work in progress and $5,902 in facilities, improvements, machinery, and equipment, offset by a decrease of $208 in amortization of intangible assets.

For the year ended June 30, 2021, Hetchy Water's major additions to construction work in progress totaled $22,586. Major depreciable facilities, improvements, intangible assets, machinery, and equipment placed in service totaled $11,703 (see Table 3C).

Hetchy Power

Hetchy Power has capital assets of $492,056, net of accumulated depreciation and amortization, invested in utility capital assets as of June 30, 2021 (see Table 3A). This amount represents an increase of $46,627 or 10.5%, primarily due to increases of $40,454 in facilities, improvements, machinery, and equipment and $6,426 in construction work in progress, offset by a decrease of $253 in amortization of intangible assets.

For the year ended June 30, 2021, Hetchy Power's major additions to construction work in progress totaled $70,059. Major depreciable facilities, improvements, intangible assets, machinery, and equipment placed in service totaled $55,828 (see Table 3C).

CleanPowerSF

CleanPowerSF had no capital assets as of June 30, 2021 and 2020.

See Note 4 for additional information about capital assets.

Debt Administration

Hetch Hetchy

As of June 30, 2022, Hetch Hetchy has outstanding Certificates of Participation, Clean Renewable Energy Bonds (CREBs), Qualified Energy Conservation Bonds (QECBs), New Clean Renewable Energy Bonds (NCREBs), 2015 Series AB revenue bonds, 2021 Series AB revenue bonds, and commercial paper. The aforementioned debts are obligations of the Power Enterprise. See Hetchy Power section below for more details.

Hetchy Water

Hetchy Water did not have debt outstanding as of June 30, 2022 and 2021. Debt, including bond issuances, associated with the funding of water-related, upcountry infrastructure capital improvements is issued through the Water Enterprise, and is reflected in the Water Enterprise's financial statements.

Hetchy Power

As of June 30, 2022 and 2021, Hetchy Power had outstanding debt of $247,525 and $174,414, respectively, as shown in Table 4. More detailed information about the Hetchy Power's debt activity is presented in Notes 6, 7 and 8 to the financial statements.

CleanPowerSF

CleanPowerSF did not have any debt outstanding as of June 30, 2022 and 2021.

(Dollars in thousands, unless otherwise stated)

Table 4 - Hetchy Power
Outstanding Debt, Net of Unamortized Costs
As of June 30, 2022, 2021, and 2020

	2022	2021	2020	2022-2021 Change	2021-2020 Change
Clean Renewable Energy Bonds 2008	$ 415	823	1,231	(408)	(408)
Certificates of Participation 2009 Series C	427	838	1,235	(411)	(397)
Certificates of Participation 2009 Series D (BABs)	12,593	12,593	12,593	—	—
Qualified Energy Conservation Bonds 2011	3,138	3,687	4,229	(549)	(542)
New Clean Renewable Energy Bonds 2012	—	—	130	—	(130)
New Clean Renewable Energy Bonds 2015	1,637	1,779	3,190	(142)	(1,411)
2015 Series A Revenue Bonds	35,144	35,297	35,444	(153)	(147)
2015 Series B Revenue Bonds	3,849	4,726	5,584	(877)	(858)
2021 Series A Revenue Bonds	90,213	—	—	90,213	—
2021 Series B Revenue Bonds	60,090	—	—	60,090	—
Commercial Paper	40,019	114,671	63,535	(74,652)	51,136
Total	$ 247,525	174,414	127,171	73,111	47,243

The increase of $73,111 was mainly due to $124,000 in 2021 Series AB revenue bond issuances, $63,058 in commercial paper issuance for Hetchy Power facilities, and $27,022 in bond premium for 2021 Series AB revenue bonds, offset by $140,043 in commercial paper, bonds, and certificates of participation principal repayments, and $926 in amortization of premium and discount.

Credit Ratings and Bond Insurance – The Power Enterprise's Power Revenue Bonds have been rated "AA-" by Fitch Inc and "AA" by Standard and Poor's (S&P) as of June 30, 2022 and 2021, respectively.

In December 2020, Moody's Investors Service, ("Moody's") assigned a first-time A2 Issuer Rating to CleanPowerSF, with a stable outlook. Hetch Hetchy Water and Power contains the Power Enterprise as a separate enterprise fund, with CleanPowerSF a component unit of the Power Enterprise. CleanPowerSF is tracked and audited as a standalone fund, with financial statements, including revenues and expenses, separate and discrete from the Power Enterprise. As such, CleanPowerSF is deemed to be a separate credit from the Power Enterprise, with its own credit rating.

Debt Service Coverage – Pursuant to the Indenture, the Power Enterprise is required to collect sufficient net revenues each fiscal year, together with any Available Funds (except Bond Reserve Funds) which include unappropriated fund balances and reserves, and cash and book value of investments held by the Treasurer for the Hetchy Power, that the SFPUC reasonably expects would be available, to pay principal and interest becoming due and payable on all outstanding bonds as provided in the Indenture, less any refundable credits, at least equal to 1.25 times annual debt service for said fiscal year. The Series 2015 AB power revenue bonds represent the first series of senior lien revenue bonds of Hetchy Power. Pursuant to Power's Master Trust Indenture, senior lien debt service coverage excludes debt service on subordinate obligations, such as Hetchy Power's existing CREBS, NCREBs, and QECBs. During fiscal year 2022, the Power Enterprise's net revenues, together with fund balances available to pay debt service and not budgeted to be expended, were sufficient to meet the rate covenant requirements under the Power Enterprise's Indenture (see Note 8).

Debt Authorization – Pursuant to Charter Section 9.107(6), the Power Enterprise can incur indebtedness upon three-fourths vote of the Board of Supervisors, for the purpose of the reconstruction or replacement of existing water facilities and electric power facilities, or combinations thereof, under the jurisdiction of the Public Utilities Commission. Pursuant to Charter Section 9.107(8), the Power Enterprise can issue revenue bonds, without voter approval, upon an affirmative vote of the Board of Supervisors, for the purpose of the acquisition, construction, installation, equipping, improvement, or rehabilitation of equipment or facilities for renewable energy and energy conservation. Pursuant to Proposition A, approved by the San Francisco voters on June 5, 2018, City Charter Section 8B.124 is amended to authorize the Power Enterprise to enter into indebtedness, including revenue bonds, notes, commercial paper or other forms of indebtedness, when authorized by ordinance approved by a two-thirds vote of the Board of Supervisors to reconstruct, replace, expand, repair, improve or construct new power facilities under the jurisdiction of SFPUC or for any other purpose of the Power Enterprise, and in compliance with City Charter Section 8B.124. Proposition A expressly prohibits the SFPUC from issuing bonds to finance the construction of power plants that generate electricity using fossil fuels or nuclear energy. As of June 30, 2022 and 2021, $163,555 and $39,555 of Hetchy Power revenue bonds were issued against existing authorization of $555,043 and $535,699, respectively.

Cost of Debt Capital **–** The Power Enterprise's outstanding long-term senior lien debt consists of the 2015 Series AB and 2021 Series AB Power Revenue Bonds issued in May 2015 and December 2021, respectively, which are issued under the Master Indenture and are senior in lien to all the other Enterprise's outstanding debt obligations. Coupon interest rates range from 3.0% to 5.0%. The Power Enterprise has previously issued and incurred debt service on Tax Credit Bonds and certificates of participation, which constitute subordinate obligations. Interest rates on the Tax Credit Bonds, which include QECBs and NCREBs, ranging from 1.2% to 1.5% (net of the federal tax subsidy). Certificates of participation carried interest rates ranging from 2.0% to 6.5%. The Power Enterprise's short-term debt issued under its commercial paper program has interest rates ranging from 0.1% to 1.1% and 0.1% to 0.2% during fiscal years 2022 and 2021, respectively.

Rates and Charges

Hetchy Water

Hetchy Water charges for services relates to the storage and delivery of water. Assessment fees from the Water Enterprise, which cover the water-related upcountry costs, were $45,815 and $44,149 for the years ended June 30, 2022 and 2021, respectively. In fiscal year 2023, the assessment fees will be $49,636, an increase of $3,821 or 8.3% as reflected in the fiscal year 2023 adopted budget.

Hetchy Power

Municipal Rates

Hetchy Power charges for services relates to power generation and electricity delivery to contractual and municipal customers. For municipal power services, customers are typically charged a General Use rate or Enterprise rate. Enterprise rates are charged based on projected PG&E equivalent rates by customer class. General fund department customers are mostly charged a General Use rate, a rate that is currently below cost of service. These General Use rates, however, are moving closer towards cost of service and increasing by $0.01 per kWh on an annual basis beginning July 1, 2020. The General Use rates have been adopted every two years.

On May 10, 2020, the Commission adopted two years of General Use rates effective July 1, 2020 through June 30, 2022. The adopted General Use rate for fiscal years 2022 and 2021 are $0.09877/kWh and $0.08877/kWh, respectively. The Power Enterprise has developed rates under the cost of service analysis model and completed the 2022 Power Rates Study in spring of 2022, in which General Use rates have been modernized to standard customer classes and incrementally increased to cost of service over the next few years. New rates effective fiscal year 2023 have been adopted in May 2022. The SFPUC Rates Schedules and Fees is available at https://sfpuc.org/accounts-services/water-power-and-sewer-rates.

Retail Rates

The Commission approved a new schedule of retail electric rates, fees, and charges for residential, commercial, and industrial customers where Hetch Hetchy has been designated as the power provider for retail customers to be applied to meter readings on or after July 1, 2016. Total bundled service charges for residential service rates and low-income residential service rates are calculated using the total rates, monthly, based on monthly meter reading, plus any applicable taxes.

To date, Hetchy Power has prepared service standards, developed system plans and specifications, acquired materials and equipment, and initiated construction of primary distribution facilities.

Pursuant to City and County of San Francisco Charter Section 8B.125, an independent rate study is performed at least once every five years. The rate study is undertaken to examine future revenue requirements and cost-of-service of the Power Enterprise. In fall of 2020, SFPUC engaged a consultant to perform a cost-of-service study. The informed rate setting from this study resulted in recommendation and approval by the Commission in the spring of 2022 for rates to be effective July 1, 2023. The SFPUC Rates Schedules and Fees is available at https://sfpuc.org/accounts-services/water-power-and-sewer-rates.

CleanPowerSF

CleanPowerSF began offering services in May 2016, giving residential and commercial electricity consumers in San Francisco a choice of having their electricity supplied from clean renewable sources, such as solar and wind, at competitive rates. CleanPowerSF offers two products: a "Green" product comprised of at least 50% renewable energy and a "SuperGreen" product comprised of 100% renewable energy. Most customers take service under the "Green" product rates and remaining customers have opted to upgrade to "SuperGreen" product rates. On May 25, 2021, the Commission approved a CleanPowerSF rate adjustment formula. Through Resolution 21-0085, CleanPowerSF rates formulaically adjusted, when PG&E rates changed to the lesser of no more than 5% higher than PG&E generation rates or rates that recover program costs. On September 28, 2021, the Commission approved a subsequent CleanPowerSF rate adjustment formula. Through Resolution 21-0152, CleanPowerSF rates formulaically adjusted when PG&E rates changed to the lesser of no more than 15% higher than PG&E generation rates or rates that recover program costs from November 1, 2021 to June 30, 2022.

CleanPowerSF revenues are adequate to support its own operations. CleanPowerSF is subject to Section 8B.125 of the City Charter, which requires an independent rate study to be performed at least once every five years, and the Commission sets rates and charges for the program. CleanPowerSF rates have been included in the 2022 Power Rates Study, which is completed in the spring of 2022 for rates to be effective July 1, 2023. The CleanPowerSF Rates Schedules are available at http://cleanpowersf.org/residential for residential customers and http://cleanpowersf.org/commercial for commercial customers.

Request for Information

This report is designed to provide our citizens, customers, investors, and creditors with an overview of Hetch Hetchy's finances and to demonstrate Hetch Hetchy's respective accountability for the money it receives. Questions regarding any of the information provided in this report or requests for additional information should be addressed to San Francisco Public Utilities Commission, Chief Financial Officer, 525 Golden Gate Avenue, 13th Floor, San Francisco, CA 94102.

This report is available at https://sfpuc.org/about-us/reports/audited-financial-statements-reports.

HETCH HETCHY WATER AND POWER AND CLEANPOWERSF

Statements of Net Position

June 30, 2022 and 2021

(In thousands)

	Hetchy Water	Hetchy Power	CleanPowerSF	2022 Total	Hetchy Water	Hetchy Power	CleanPowerSF	Restated 2021 Total*
Assets								
Current assets:								
Cash and investments with City Treasury	$ 94,190	189,641	56,234	340,065	89,373	190,719	90,838	370,930
Cash and investments outside City Treasury	1	16	—	17	1	611	—	612
Receivables:								
Charges for services (net of allowance for doubtful accounts from Hetchy Power of $1,297 and CleanPowerSF of $6,330 as of June 30, 2022; and Hetchy Power of $1,258 and CleanPowerSF of $5,485 as of June 30, 2021)	475	10,189	48,703	59,367	442	19,024	28,265	47,731
Due from other City departments, current portion	—	867	—	867	—	7,413	—	7,413
Due from other governments	512	298	—	810	579	267	—	846
Interest	40	201	61	302	21	125	55	201
Restricted interest and other receivables	—	4,303	—	4,303	—	11,800	—	11,800
Total current receivables	1,027	15,858	48,764	65,649	1,042	38,629	28,320	67,991
Prepaid charges, advances, and other receivables, current portion	216	1,911	10,550	12,677	402	2,666	2,184	5,252
Inventory	199	1,678	—	1,877	191	1,820	—	2,011
Restricted cash and investments outside City Treasury, current portion	—	5,228	—	5,228	—	153	—	153
Total current assets	95,633	214,332	115,548	425,513	91,009	234,598	121,342	446,949
Non-current assets:								
Net pension asset	13,912	17,004	1,833	32,749	—	—	—	—
Restricted cash and investments with City Treasury	—	—	—	—	6,990	5,241	—	12,231
Restricted cash and investments outside City Treasury, less current portion	—	8,824	—	8,824	—	3,690	—	3,690
Capital assets, not being depreciated and amortized	57,376	265,772	—	323,148	38,571	174,555	—	213,126
Capital assets, net of accumulated depreciation and amortization	143,631	319,864	—	463,495	138,910	317,501	—	456,411
Lease right-to-use assets, net of accumulated amortization	61	73	230	364	74	90	575	739
Prepaid charges, advances, and other receivables, less current portion	146	9,390	12,236	21,772	152	753	—	905
Due from other City departments, less current portion	—	10,937	—	10,937	—	4,993	—	4,993
Total non-current assets	215,126	631,864	14,299	861,289	184,697	506,823	575	692,095
Total assets	310,759	846,196	129,847	1,286,802	275,706	741,421	121,917	1,139,044
Deferred outflows of resources:								
Pensions	6,696	8,183	852	15,731	7,799	9,531	803	18,133
Other post-employment benefits	3,272	3,999	798	8,069	3,725	4,552	442	8,719
Total deferred outflows of resources	9,968	12,182	1,650	23,800	11,524	14,083	1,245	26,852
Liabilities								
Current liabilities:								
Accounts payable	8,454	16,668	23,526	48,648	4,262	22,909	15,859	43,030
Accrued payroll	1,098	2,684	373	4,155	1,042	2,596	291	3,929
Accrued vacation and sick leave, current portion	1,034	1,747	279	3,060	1,059	1,777	205	3,041
Accrued workers' compensation, current portion	215	400	—	615	197	378	—	575
Damage claims liability, current portion	228	358	15	601	218	409	6	633
Due to other City departments, current portion	—	380	—	380	—	369	—	369
Lease liability, current portion	3	3	232	238	16	19	345	380
Unearned revenues, refunds, and other, current portion	24	5,923	4,196	10,143	22	5,141	1,028	6,191
Bond, loan, and lease interest payable	—	1,327	—	1,327	—	459	1	460
Bonds, current portion	—	1,966	—	1,966	—	1,928	—	1,928
Certificates of participation, current portion	—	427	—	427	—	405	—	405
Commercial paper	—	40,019	—	40,019	—	114,671	—	114,671
Current liabilities payable from restricted assets	6,324	19,059	—	25,383	9,057	15,393	—	24,450
Total current liabilities	17,380	90,961	28,621	136,962	15,873	166,454	17,735	200,062
Long-term liabilities:								
Other post-employment benefits obligations	14,240	17,405	2,264	33,909	14,444	17,653	2,909	35,006
Net pension liability	—	—	—	—	26,645	32,566	3,008	62,219
Accrued vacation and sick leave, less current portion	1,135	1,850	267	3,252	1,126	1,840	195	3,161
Accrued workers' compensation, less current portion	1,013	1,850	—	2,863	923	1,740	—	2,663
Damage claims liability, less current portion	399	665	17	1,081	307	699	—	1,006
Bonds, less current portion	—	192,520	—	192,520	—	44,384	—	44,384
Lease liability, less current portion	59	72	—	131	62	75	232	369
Unearned revenues, refunds, and other, less current portion	110	804	9,000	9,914	116	852	9,000	9,968
Certificates of participation, less current portion	—	12,593	—	12,593	—	13,026	—	13,026
Total long-term liabilities	16,956	227,759	11,548	256,263	43,623	112,835	15,344	171,802
Total liabilities	34,336	318,720	40,169	393,225	59,496	279,289	33,079	371,864
Deferred inflows of resources:								
Related to pensions	34,477	42,138	5,414	82,029	988	1,207	1,093	3,288
Other post-employment benefits	2,734	3,342	1,594	7,670	2,085	2,548	1,913	6,546
Total deferred inflows of resources	37,211	45,480	7,008	89,699	3,073	3,755	3,006	9,834
Net position:								
Net investment in capital assets	201,007	352,162	—	553,169	177,481	323,066	—	500,547
Restricted for debt service	—	140	—	140	—	99	—	99
Unrestricted	48,173	141,876	84,320	274,369	47,180	149,295	87,077	283,552
Total net position	$ 249,180	494,178	84,320	827,678	224,661	472,460	87,077	784,198

*Restated per Governmental Accounting Standards Board (GASB) Statement No. 87, *Leases*.

See accompanying notes to financial statements.

HETCH HETCHY WATER AND POWER AND CLEANPOWERSF
Statements of Revenues, Expenses, and Changes in Net Position

Years ended June 30, 2022 and 2021

(In thousands)

	Hetchy Water	Hetchy Power	CleanPowerSF	2022 Total	Hetchy Water	Hetchy Power	CleanPowerSF	Restated 2021 Total*
Operating revenues:								
Charges for services	$ 49,200	173,105	257,893	480,198	46,979	136,247	207,698	390,924
Rents and concessions	112	137	—	249	111	136	—	247
Total operating revenues	49,312	173,242	257,893	480,447	47,090	136,383	207,698	391,171
Operating expenses:								
Personnel services	15,636	34,646	4,167	54,449	19,871	40,756	7,641	68,268
Contractual services	2,854	9,604	6,821	19,279	2,398	8,705	6,678	17,781
Transmission/distribution and other power costs	—	51,521	192	51,713	—	36,711	1,012	37,723
Purchased electricity	—	6,731	239,546	246,277	—	5,982	189,977	195,959
Materials and supplies	1,362	2,270	33	3,665	1,272	1,990	26	3,288
Depreciation and amortization	6,305	17,628	345	24,278	6,028	15,650	345	22,023
Services provided by other departments	3,129	6,253	3,621	13,003	2,517	6,137	3,928	12,582
General and administrative and other	23,017	27,694	7,393	58,104	18,433	29,709	3,104	51,246
Total operating expenses	52,303	156,347	262,118	470,768	50,519	145,640	212,711	408,870
Operating income (loss)	(2,991)	16,895	(4,225)	9,679	(3,429)	(9,257)	(5,013)	(17,699)
Non-operating revenues (expenses):								
Federal and state grants	450	4,924	2,424	7,798	1,349	1,483	—	2,832
Interest and investment (loss) income	(2,932)	(4,001)	(1,286)	(8,219)	(232)	24	51	(157)
Interest expenses	(1)	(5,624)	(5)	(5,630)	(2)	(1,972)	(26)	(2,000)
Amortization of premium, discount, and issuance costs	—	(192)	—	(192)	—	219	—	219
Net gain from sale of assets	7	9	—	16	—	—	—	—
Other non-operating revenues	22	10,830	335	11,187	3	17,790	927	18,720
Other non-operating expenses	(37)	(591)	—	(628)	(63)	(902)	—	(965)
Net non-operating revenues (loss)	(2,491)	5,355	1,468	4,332	1,055	16,642	952	18,649
Change in net position before transfers	(5,482)	22,250	(2,757)	14,011	(2,374)	7,385	(4,061)	950
Transfers from the City and County of San Francisco	30,001	—	—	30,001	16,000	—	—	16,000
Transfers to the City and County of San Francisco	—	(532)	—	(532)	—	(532)	—	(532)
Net transfers	30,001	(532)	—	29,469	16,000	(532)	—	15,468
Change in net position	24,519	21,718	(2,757)	43,480	13,626	6,853	(4,061)	16,418
Net position at beginning of year	224,661	472,460	87,077	784,198	211,035	465,607	91,138	767,780
Net position at end of year	$ 249,180	494,178	84,320	827,678	224,661	472,460	87,077	784,198

*Restated per Governmental Accounting Standards Board (GASB) Statement No. 87, *Leases*.

See accompanying notes to financial statements.

HETCH HETCHY WATER AND POWER AND CLEANPOWERSF

Statements of Cash Flows

Years ended June 30, 2022 and 2021

(In thousands)

	Hetchy Water	Hetchy Power	CleanPowerSF	2022 Total	Hetchy Water	Hetchy Power	CleanPowerSF	Restated 2021 Total*
Cash flows from operating activities:								
Cash received from customers, including cash deposits	$ 49,161	183,203	237,947	470,311	46,176	120,981	223,325	390,482
Cash received from tenants for rent	114	139	–	253	116	142	–	258
Cash received from miscellaneous revenues	22	7,237	335	7,594	3	13,427	927	14,357
Cash paid to employees for services	(20,430)	(40,448)	(5,828)	(66,706)	(19,597)	(40,236)	(5,344)	(65,177)
Cash paid to suppliers for goods and services	(25,726)	(107,969)	(268,958)	(402,653)	(20,950)	(81,722)	(211,735)	(314,407)
Cash paid for judgments and claims	(276)	(2,163)	(1,529)	(3,968)	(563)	(4,361)	(153)	(5,077)
Net cash provided by (used in) operating activities	2,865	39,999	(38,033)	4,831	5,185	8,231	7,020	20,436
Cash flows from non-capital and related financing activities:								
Cash received from grants	517	4,893	5,100	10,510	3,345	2,860	–	6,205
Cash received for license fees	–	3,333	–	3,333	–	3,151	–	3,151
Cash received from settlements	–	–	–	–	–	797	–	797
Cash paid for rebates, program incentives, and other	(37)	(591)	–	(628)	(63)	(902)	–	(965)
Cash paid for Hetchy Power loan interest	–	–	–	–	–	–	(235)	(235)
Transfers from the City and County of San Francisco	30,001	–	–	30,001	16,000	–	–	16,000
Transfers to the City and County of San Francisco	–	(532)	–	(532)	–	(532)	–	(532)
Net cash provided by non-capital financing activities	30,481	7,103	5,100	42,684	19,282	5,374	(235)	24,421
Cash flows from capital and related financing activities:								
Acquisition and construction of capital assets	(32,558)	(108,062)	–	(140,620)	(16,981)	(62,461)	–	(79,442)
Proceeds from sale of capital assets	7	9	–	16	–	–	–	–
Lease payments	(17)	(22)	(351)	(390)	(17)	(21)	(350)	(388)
Proceeds from bond issuance, net of premium, discount, refunding loss, and issuance costs	–	151,022	–	151,022	–	–	–	–
Principal paid on long-term debt	–	(2,333)	–	(2,333)	–	(3,674)	–	(3,674)
Proceeds from commercial paper borrowings		63,058		63,058	–	51,136	–	51,136
Principal paid on commercial paper	–	(137,710)	–	(137,710)	–	–	–	–
Interest paid on long-term debt	–	(4,695)	–	(4,695)	–	(2,970)	–	(2,970)
Interest paid on commercial paper borrowings	–	(59)	–	(59)	–	(132)	–	(132)
Issuance costs paid on long-term debt	–	(1,118)	–	(1,118)	–	–	–	–
Federal interest income subsidy	–	397	–	397	–	511	–	511
Net cash used in capital and related financing activities	(32,568)	(39,513)	(351)	(72,432)	(16,998)	(17,611)	(350)	(34,959)
Cash flows from investing activities:								
Interest Income	329	1,003	407	1,739	739	1,986	802	3,527
Proceeds from sale of investments outside City Treasury	–	7,118	–	7,118	–	3,968	–	3,968
Purchases of investments outside City Treasury	–	(7,118)	–	(7,118)	–	(3,968)	–	(3,968)
Net cash provided by investing activities	329	1,003	407	1,739	739	1,986	802	3,527
Increase (decrease) in cash and cash equivalents	1,107	8,592	(32,877)	(23,178)	8,208	(2,020)	7,237	13,425
Cash and cash equivalents:								
Beginning of year	96,276	200,265	90,764	387,305	88,068	202,285	83,527	373,880
End of year	$ 97,383	208,857	57,887	364,127	96,276	200,265	90,764	387,305
Reconciliation of cash and cash equivalents to the statements of net position:								
Cash and investments with City Treasury:								
Unrestricted	$ 94,190	189,641	56,234	340,065	89,373	190,719	90,838	370,930
Restricted	–	–	–	–	6,990	5,241	–	12,231
Add: Unrealized loss (gain) on investments with City Treasury	3,192	5,148	1,653	9,993	(88)	(149)	(74)	(311)
Cash and investments outside City Treasury:								
Unrestricted	1	16	–	17	1	611	–	612
Restricted	–	14,052	–	14,052	–	3,843	–	3,843
Cash and cash equivalents at end of year on statements of cash flows	$ 97,383	208,857	57,887	364,127	96,276	200,265	90,764	387,305

*Restated per Governmental Accounting Standards Board (GASB) Statement No. 87, *Leases*.

HETCH HETCHY WATER AND POWER AND CLEANPOWERSF

Statements of Cash Flows

Years ended June 30, 2022 and 2021

(In thousands)

		Hetchy Water	Hetchy Power	CleanPowerSF	2022 Total	Hetchy Water	Hetchy Power	CleanPowerSF	Restated 2021 Total*
Reconciliation of operating income (loss) to net cash provided by (used in) operating activities:									
Operating income (loss)	$	(2,991)	16,895	(4,225)	9,679	(3,429)	(9,257)	(5,013)	(17,699)
Adjustments to reconcile operating income (loss) to net cash provided by (used in) operating activities:									
Depreciation and amortization		6,305	17,628	345	24,278	6,028	15,650	345	22,023
Miscellaneous revenues		22	7,237	335	7,594	3	13,427	927	14,357
Provision for uncollectible accounts		–	39	845	884	–	667	3,675	4,342
Write-off of capital assets		7	648	–	655	51	8,333	–	8,384
Changes in operating assets and liabilities:									
Receivables:									
Charges for services		(33)	8,796	(21,283)	(12,520)	(413)	(16,724)	2,772	(14,365)
Prepaid charges, advances, and other		192	(344)	(20,574)	(20,726)	114	(12,172)	576	(11,482)
Due from other City departments		–	531	–	531	104	2,437	–	2,541
Inventory		(8)	142	–	134	(4)	(211)	–	(215)
Accounts payable		4,192	(6,241)	7,667	5,618	3,304	8,724	(6,047)	5,981
Accrued payroll		56	88	82	226	154	298	91	543
Other post-employment benefits obligations		898	1,099	(1,320)	677	(2,409)	(2,945)	1,242	(4,112)
Pension obligations		(5,965)	(7,291)	(569)	(13,825)	1,972	2,411	855	5,238
Accrued vacation and sick leave		(16)	(20)	146	110	539	660	109	1,308
Accrued workers' compensation		108	132	–	240	(67)	(82)	–	(149)
Damage claims liability		102	(85)	26	43	(33)	(1,114)	(100)	(1,247)
Due to other City departments		–	11	–	11	(240)	(231)	(1,592)	(2,063)
Unearned revenues, refunds, and other liabilities		(4)	734	492	1,222	(489)	(1,640)	9,180	7,051
Total adjustments		5,856	23,104	(33,808)	(4,848)	8,614	17,488	12,033	38,135
Net cash provided by (used in) operating activities	$	2,865	39,999	(38,033)	4,831	5,185	8,231	7,020	20,436
Noncash transactions:									
Accrued capital asset costs	$	6,324	19,059	–	25,383	9,057	15,393	–	24,450
Receivables from Wastewater		–	629	–	629	–	739	–	739
Unrealized loss (gain) on investments		3,192	5,148	1,653	9,993	(88)	(149)	(74)	(311)

*Restated per Governmental Accounting Standards Board (GASB) Statement No. 87, *Leases*.

See accompanying notes to financial statements.

(1) Description of Reporting Entity

San Francisco Hetch Hetchy Water and Power (Hetch Hetchy or the Enterprise) was established as a result of the Raker Act of 1913, which granted water and power resources rights-of-way on the Tuolumne River in Yosemite National Park and Stanislaus National Forest to the City and County of San Francisco (the City). CleanPowerSF, launched in May 2016, provides green electricity from renewable sources to residential and commercial customers in San Francisco and was reported as part of Hetch Hetchy starting fiscal year 2016. Hetch Hetchy is a stand-alone enterprise comprised of three funds, Hetchy Power (the Power Enterprise), CleanPowerSF and Hetchy Water, the portion of the Water Enterprise's operations, specifically the upcountry water supply and transmission service. Hetch Hetchy accounts for the activities of Hetch Hetchy Water and Power and is engaged in the collection and conveyance of approximately 85% of the regional system's water supply and in the generation and transmission of electricity from that resource, as well as the City Power services including energy efficiency and renewable.

Approximately 69% of the electricity generated by Hetchy Power is used to provide electric service to the City's municipal customers (including the San Francisco Municipal Transportation Agency, Recreation and Parks Department, the Port of San Francisco, the San Francisco International Airport and its tenants, Zuckerberg San Francisco General Hospital and Trauma Center, streetlights, Moscone Convention Center, and the Water and Wastewater Enterprises). The majority of the remaining 31% balance of electricity is sold to CleanPowerSF and the wholesale electric market. As a result of the 1913 Raker Act, energy produced above the City's municipal load is sold first to the Districts to cover their agricultural pumping and municipal load needs and any remaining energy is either sold to other municipalities and/or government agencies (not for resale) or sold into the CAISO. Hetch Hetchy operation is an integrated system of reservoirs, hydroelectric power plants, aqueducts, pipelines, and transmission lines.

Hetch Hetchy also purchases wholesale electric power from various energy providers that are used in conjunction with owned hydro resources to meet the power requirements of its customers. Operations and business decisions can be greatly influenced by market conditions, state and federal power matters before the California Public Utilities Commission (CPUC), the CAISO, and the Federal Energy Regulatory Commission (FERC). Therefore, Hetch Hetchy serves as the City's representative at CPUC, CAISO, and FERC forums and continues to monitor regulatory proceedings.

Until August 1, 2008, the San Francisco Public Utilities Commission (SFPUC) consisted of five members, all appointed by the Mayor. Proposition E, a City and County of San Francisco Charter Section 4.112 amendment approved by the voters in the June 3, 2008 election, terminated the terms of all five existing members of the SFPUC, changed the process for appointing new members, and set qualifications for all members. Under the amended Charter, the Mayor continues to nominate candidates to the SFPUC, but nominees do not take office until the Board of Supervisors votes to approve their appointments by a majority (at least six members). The amended Charter provides for staggered four-year terms for SFPUC members and requires them to meet the following qualifications:

- Seat 1 must have experience in environmental policy and an understanding of environmental justice issues.
- Seat 2 must have experience in ratepayer or consumer advocacy.
- Seat 3 must have experience in project finance.
- Seat 4 must have expertise in water systems, power systems, or public utility management.
- Seat 5 is an at-large member.

The SFPUC is a department of the City, and as such, the financial operations of Hetch Hetchy, Wastewater, and the Water Enterprises are included in the Annual Comprehensive Financial Report of the City as enterprise funds. These financial statements are intended to present only the financial position, and the changes in financial position and cash flows of only that portion of the City that is attributable to the transactions of Hetch Hetchy. They do not purport to, and do not, present fairly the financial position of the City as of June 30, 2022 and 2021, and the changes in its financial position, or, where applicable, the cash flows for the years then ended, in conformity with U.S. generally accepted accounting principles (GAAP).

(2) Significant Accounting Policies

(a) *Basis of Accounting and Measurement Focus*

The accounts of Hetch Hetchy are organized on the basis of proprietary fund types and are included as enterprise funds of the City. The activities of Hetch Hetchy and each fund are accounted for with a separate set of self-balancing accounts that comprise Hetch Hetchy's and each fund's assets, deferred outflows, liabilities, deferred inflows, net position, revenues, and expenses. Enterprise funds account for activities (i) that are financed with debt that is secured solely by a pledge of the net revenues from fees and charges of the activity; or (ii) that are required by laws or regulations that the activity's costs of providing services, including capital costs (such as depreciation or debt service), be recovered with fees and charges, rather than with taxes or similar revenues; or (iii) that the pricing policies of the activity establish fees and charges designed to recover its costs, including capital costs (such as depreciation or debt service).

The financial activities of Hetch Hetchy are accounted for on a flow of economic resources measurement focus, using the accrual basis of accounting in accordance with U.S. GAAP. Under this method, all assets and liabilities associated with operations are included on the Statements of Net Position, revenues are recognized when earned, and expenses are recognized when liabilities are incurred. Operating revenues are defined as charges to customers and rental income.

Hetch Hetchy applies all applicable Governmental Accounting Standards Board (GASB) pronouncements.

(b) *Cash and Cash Equivalents*

Hetch Hetchy considers its pooled deposits and investments held with the City Treasury to be demand deposits and, therefore, cash and cash equivalents for financial reporting. The City Treasury also holds non-pooled cash and investments for the Enterprise. Non-pooled restricted deposits and restricted deposits and investments held outside the City Treasury with original maturities of three months or less are considered to be cash equivalents.

(c) *Investments*

Money market funds are carried at cost, which approximates fair value. All other investments are stated at fair value based upon quoted market prices. Changes in fair value are recognized as investment gains or losses and are recorded as a component of non-operating revenues.

(d) *Inventory*

Inventory consists primarily of construction materials and maintenance supplies and is valued at average cost. Inventory is expensed as it is consumed.

(e) ***Capital Assets***

Capital assets are defined as assets with an initial individual cost of more than $5 and an estimated useful life in excess of one year. Capital assets with an original acquisition date prior to July 1, 1977 are recorded in the financial statements at estimated cost, as determined by an independent professional appraisal, or at cost, if known. All subsequent acquisitions have been recorded at cost. All donated capital assets are valued at estimated fair value at the time of donation. Depreciation and amortization are computed using the straight-line method over the estimated useful lives of the related assets, which range from 1 to 100 years for equipment and 1 to 200 years for buildings, structures, and improvements. No depreciation or amortization is recorded in the year of acquisition, and depreciation or amortization is recorded in the year of disposal.

(f) ***Intangible Assets***

Under GASB Statement No. 51, *Accounting and Financial Reporting for Intangible Assets,* intangible assets are defined as identifiable, non-financial assets capable of being separated, sold, transferred, or licensed, and include contractual or legal rights. Examples of intangible assets include rights-of-way easements, land use rights, water rights, licenses, and permits. The accounting pronouncement also provides guidance on the capitalization of internally generated intangible assets, such as the development and installation of computer software by or on behalf of the reporting entity.

According to the standard, Hetch Hetchy is required to capitalize intangible assets with a useful life extending beyond one reporting period. Hetch Hetchy has established a capitalization threshold of $100. GASB Statement No. 51 also requires amortization of intangible assets over the benefit period, except for certain assets having an indefinite useful life. Assets with an indefinite useful life generally provide a benefit that is not constrained by legal or contractual limitations or any other external factor and, therefore, are not amortized (see Note 4).

(g) ***Construction Work in Progress***

The cost of acquisition and construction of major plant and equipment is recorded as construction work in progress. Costs of construction projects that are discontinued are recorded as expenses in the year in which the decision is made to discontinue such projects.

(h) ***Capitalization of Interest***

A portion of the interest cost incurred on capital projects is capitalized on assets that require a period of time for construction or to otherwise prepare them for their intended use. Such amounts are amortized over the useful lives of the assets (see Note 4). Per the implementation of GASB Statement No. 89, *Accounting for Interest Cost Incurred Before the End of a Construction Period*, no interest was capitalized to capital assets in fiscal year 2022.

(i) ***Bond Discount, Premium, and Issuance Costs***

Bond issuance costs related to prepaid insurance costs are capitalized and amortized using the effective interest method. Other bond issuance costs are expensed when incurred. Original issue bond discount or premium are offset against the related debt and are also amortized using the effective interest method.

(Dollars in thousands, unless otherwise stated)

(j) ***Accrued Vacation and Sick Leave***

Accrued vacation pay, which may be accumulated up to 10 weeks per employee, is charged to expense as earned. Sick leave earned subsequent to December 6, 1978 is non-vesting and may be accumulated up to six months per employee.

(k) ***Workers' Compensation***

The Enterprise is self-insured for workers' compensation claims and accrues the estimated cost of those claims, including the estimated cost of incurred but not reported claims (see Note 13(b)).

(l) ***General Liability***

The Enterprise is self-insured for general liability and uninsurable property damage claims. Commercially uninsurable property includes assets that are underground or provide transmission and distribution. Maintained commercial coverage does not cover claims attributed to loss from earthquake, contamination, pollution remediation efforts, and other specific naturally occurring contaminants such as mold. The liability represents an estimate of the cost of all outstanding claims, including adverse loss development and estimated incurred but not reported claims (see Note 13(a)).

(m) ***Arbitrage Rebate Payable***

Certain bonds are subject to arbitrage rebate requirements in accordance with regulations issued by the U.S. Treasury Department. The requirements of the Clean Renewable Energy Bonds (CREBs), the Qualified Energy Conservation Bonds (QECBs), and the New Clean Renewable Energy Bonds (NCREBs) stipulate that the first payment of excess investment earnings, if any, is required to be rebated to the federal government, no later than 60 days after the end of the fifth bond year of the agreement. Hetch Hetchy did not have any arbitrage liability as of June 30, 2022 and 2021.

(n) ***Income Taxes***

As a department of a government agency, the Enterprise is exempt from both federal income taxes and California State franchise taxes.

(o) ***Revenue Recognition***

Water and power revenues are based on water and power consumption and billing rates. Generally, customers are billed monthly. Revenues earned but unbilled are accrued as charges for services receivables on the Statements of Net Position. The unbilled amounts for the fiscal years ending June 30, 2022 and 2021 are as follows:

	Hetchy Water	Hetchy Power	CleanPowerSF	Total
2022	$ –	3,806	21,878	25,684
2021	–	13,823	12,600	26,423

(p) ***Use of Estimates***

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

(q) ***Eliminations***

Eliminations for internal activities between the Hetchy Power and CleanPowerSF are made in the Statements of Net Position. There were no activities requiring eliminations for fiscal years ended June 30, 2022 and 2021.

(r) ***Accounting and Financial Reporting for Pollution Remediation Obligations***

According to GASB Statement No. 49, *Accounting and Financial Reporting for Pollution Remediation Obligations*, a government would have to estimate its expected outlays for pollution remediation if it knows a site is polluted and any of the following recognition triggers occur:

- Pollution poses an imminent danger to the public or environment and a government has little or no discretion to avoid fixing the problem;
- A government has violated a pollution prevention-related permit or license;
- A regulator has identified (or evidence indicates it will identify) a government as responsible (or potentially responsible) for cleaning up pollution, or for paying all or some of the cost of the cleanup;
- A government is named (or evidence indicates that it will be named) in a lawsuit to compel it to address the pollution; or
- A government begins or legally obligates itself to begin cleanup or post-cleanup activities (limited to amounts the government is legally required to complete).

As a part of ongoing operations, situations may occur requiring the removal of pollution or other hazardous material. These situations typically arise in the process of acquiring an asset, preparing an asset for its intended use, or during the Design Phase of projects under review by the project managers. Other times, pollution may arise during the implementation and construction of a major or minor capital project. Examples of pollution may include, but are not limited to, asbestos or lead paint removal; leaking of sewage in underground pipes or neighboring areas; chemical spills; removal and disposal of known toxic waste; harmful biological and chemical pollution of water; or contamination of surrounding soils by underground storage tanks (see Note 14(d)).

(s) ***Leases***

Leases are defined as a contract that conveys control of the right to use another entity's underlying asset for a specified period. Hetch Hetchy is a lessee for various noncancellable leases of building and radio tower.

Short-term Leases – For leases with a maximum possible term of 12 months or less at commencement, the Enterprise recognizes lease revenue if the Enterprise is the lessor of the lease or lease expense if the Enterprise is the lessee of the lease, based on the provisions of the lease contract. Liabilities are only recognized if payments are received in advance, and receivables are only recognized if payments are received subsequent to the reporting period.

Leases other than Short-term – For all other leases (i.e. those that are not short-term), Hetch Hetchy recognizes a lease liability and intangible right-to-use lease asset as lessee leases, or lease receivable and deferred inflow of resources as lessor leases.

Measurement of Lease Amounts (Lessee) – Hetch Hetchy's lease liability is recorded at the present value of future minimum lease payments as of the date of inception. Subsequently, the lease liability is reduced by the principal portion of lease payments made. The lease asset is initially measured as the initial amount of the lease liability, less lease payments made at or before the lease commencement date, plus any initial direct costs ancillary to placing the underlying asset into service, less any lease incentives received at or before the lease commencement date. Subsequently, the lease asset is amortized into depreciation and amortization expense on a straight-line basis over the shorter of the lease term or the useful life of the underlying asset. If Hetch Hetchy is reasonably certain of exercising a purchase option contained in a lease, the lease asset will be amortized over the useful life of the underlying asset.

Measurement of Lease Amounts (Lessor) – Hetch Hetchy's lease receivable is measured at the present value of payments expected to be received during the lease term, reduced by any provision of estimated uncollectible amounts. Subsequently, the lease receivable is reduced by the principal portion of lease payments collected. The deferred inflow of resources is initially measured as the initial amount of the lease receivable, less any lease incentives paid to, or on behalf of, the lessee at or before the commencement of the lease term, plus lease payments received from the lease at or before the commencement of the lease term that related to future periods. Subsequently, the deferred inflow of resources as lease revenue on a straight-line basis over the lease term.

Key Estimates and Judgements – Key estimates and judgements include how Hetch Hetchy determines (a) the discount rate it uses to calculate the present value of the expected lease payments, (b) lease terms, (c) lease payments, and (d) materiality threshold for equipment.

- Hetch Hetchy generally uses its estimated incremental borrowing rate as the discount rate for leases unless the rate implicit in the lease. The City's incremental borrowing rate (IBR) is established using the average of Municipal Market Data (MMD) AAA benchmark interest rate index by maturity date (year 1 to 30+), plus the average credit spread based on City's Aa/AA, COP, Tax-exempt to generate the yield curve and discount rate table. The City's incremental borrowing rate for leases is based on the rate of interest it would need to pay if it issued general obligation bonds to borrow an amount equal to the lease payments under similar terms at the commencement or remeasurement date.

- The lease term includes the noncancellable period of the lease, plus any additional periods covered by either lessee or lessor unilateral option to (1) extend for which it is reasonably certain to be exercised, or (2) terminate for which it is reasonably certain not to be exercised. Periods in which both the lessee and lessor have an option to terminate (or if both parties have to agree to extend) are excluded from the lease term.

- Payments are evaluated by Hetch Hetchy to determine if they should be included in the measurement of the lease receivables or lease liabilities, including those payments that require a determination of whether they are reasonably certain of being made, such as residual value guarantees, purchase options, payments for termination penalties, and other payments.

- Equipment and other leases have a capitalization threshold of $100. 70% below market rent and/or ground leases are determined to be below market rent (BMR), excluded from lease capitalization.

(Dollars in thousands, unless otherwise stated)

Remeasurement of Lease – Hetch Hetchy monitors changes in circumstances that may require remeasurement of a lease. When certain changes occur that are expected to significantly affect the amount of the lease receivable or lease liability, the receivable or liability is remeasured and a corresponding adjustment is made to the deferred inflow of resources or lease asset, respectively.

Presentation in Statements of Net Position – Lease assets are reported with non-current assets, lease liabilities are reported with current and long-term liabilities in the Statements of Net Position.

(t) *Other Post-employment Benefits (OPEB)*

As prescribed under GASB Statement No. 75, *Accounting and Financial Reporting for Post-employment Benefits Other than Pensions*, net OPEB liability, deferred outflows/inflows of resources related to OPEB, and OPEB expense are actuarially determined on a citywide basis. Net OPEB liability is measured as the portion of the present value of projected benefit payments to be provided to current active and inactive employees attributed to those employees' past service, less the amount of the Retiree Healthcare Trust Fund investments measured at fair value (see Note 11(b)).

(u) *New Accounting Standards Adopted in Fiscal Year 2022*

1) In June 2017, the GASB issued Statement No. 87, *Leases*. GASB Statement No. 87 establishes a single model for lease accounting and requires reporting of certain lease liabilities that currently are not reported. The new standard is effective for periods beginning after June 15, 2021. The Enterprise adopted the provisions of Statement No. 87 in fiscal year 2022 (see Note 9). As a result of adoption, the cumulative effect of applying this Statement is recorded as beginning balances for the following accounts as of July 1, 2020:

		Hetchy Water	Hetchy Power	CleanPowerSF	Total 2021
Beginning balance:					
Right-to-use Assets	$	93	113	920	1,126
Lease Liability - Current		(29)	(35)	(371)	(435)
Lease Liability - Long Term		(64)	(78)	(549)	(691)
Activities:					
Accumulated Amortization		(19)	(23)	(345)	(387)
Accrued Interest Payable - Current		—	—	(1)	(1)
Lease Liability - Current		13	16	26	55
Lease Liability - Long Term		2	3	317	322
Expenses		4	4	3	11
Total:					
Right-to-use Assets		93	113	920	1,126
Accumulated Amortization		(19)	(23)	(345)	(387)
Accrued Interest Payable - Current		—	—	(1)	(1)
Lease Liability - Current		(16)	(19)	(345)	(380)
Lease Liability - Long Term		(62)	(75)	(232)	(369)
Expenses		4	4	3	11
Change to net position	$	4	4	3	11

2) In June 2018, the GASB issued Statement No. 89, *Accounting for Interest Cost Incurred before the End of a Construction Period*. GASB Statement No. 89 establishes accounting requirements for interest cost incurred before the end of construction period. The new

standard is effective for periods beginning after December 15, 2020. The Enterprise adopted the provisions of Statement No. 89 in fiscal year 2022.

3) In January 2020, the GASB issued Statement No. 92, *Omnibus 2020*. GASB Statement No. 92 addresses practice issues that have been identified during implementation and application of certain GASB Statements. The new standard is effective for periods beginning after June 15, 2021. The Enterprise adopted the provisions of Statement No. 92 in fiscal year 2022, which did not have significant effect on its financial statements.

4) In March 2020, the GASB issued Statement No. 93, *Replacement of Interbank Offered Rates (IBOR)*. The objective of this Statement is to address those and other accounting and financial reporting implications that result from the replacement of an IBOR. The new standard is effective for periods beginning after June 15, 2021. The Enterprise adopted the provisions of Statement No. 93 in fiscal year 2022, which did not have a significant effect on its financial statements.

(v) ***GASB Statements Implemented in Fiscal Year 2021***

1) In January 2017, the GASB issued Statement No. 84, *Fiduciary Activities*. GASB Statement No. 84 establishes criteria for state and local governments to identify fiduciary activities and how those activities should be reported. The new standard is effective for periods beginning after December 15, 2019. The Enterprise adopted the provisions of this Statement in fiscal year 2021, which did not have a significant effect on its financial statements.

2) In August 2018, the GASB issued Statement No. 90, *Accounting and Financial Reporting for Majority Equity Interests*. GASB Statement No. 90 provides clarification when a government should report a majority equity interest in a legally separate organization as either a component unit or an investment. The new standard is effective for periods beginning after December 15, 2019. The Enterprise adopted the provisions of this Statement in fiscal year 2021, which did not have a significant effect on its financial statements.

3) In June 2020, the GASB issued Statement No. 97, *Certain Component Unit Criteria, and Accounting and Financial Reporting for Internal Revenue Code Section 457 Deferred Compensation Plans* – an amendment of GASB Statements No. 14 and No. 84, and a supersession of GASB Statement No. 32. GASB Statement No. 97 clarifies rules related to reporting of fiduciary activities under Statements No. 14 and No. 84 and enhances the accounting and financial reporting of IRS Code section 457 plans that meet the definition of a pension plan. The new standard is effective for periods beginning after June 15, 2021. The Enterprise adopted early the provisions of this Statement in fiscal year 2021, which did not have a significant effect on its financial statements.

4) In October 2021, the GASB issued Statement No. 98, *The Annual Comprehensive Financial Report*. GASB Statement No. 98 updates existing accounting standards by changing the name of the Comprehensive Annual Financial Report to the Annual Comprehensive Financial Report. The new standard is effective for periods ending after December 15, 2021. The Enterprise adopted the provisions of this Statement in fiscal year 2021, which did not have a significant effect on its financial statements.

(w) ***Future Implementation of New Accounting Standards***

1) In May 2019, the GASB issued Statement No. 91, *Conduit Debt Obligations*. GASB Statement No. 91 enhances the compatibility and consistency of conduit debt obligation

reporting and reporting of related transactions by State and local government issuers. The new standard is effective for periods beginning after December 15, 2021. The Enterprise will implement the provisions of Statement No. 91 in fiscal year 2023.

2) In March 2020, the GASB Issued Statement No. 94, *Public-Private and Public-Public Partnerships and Availability Payment Arrangements*. The primary objective of this Statement is to improve financial reporting by addressing issues related to public-private and public-public partnership arrangements (PPPs). The new standard is effective for periods beginning after June 15, 2022. The Enterprise will implement the provisions of Statement No. 94 in fiscal year 2023.

3) In May 2020, the GASB issued Statement No. 96, *Subscription-Based Information Technology Arrangements*. This Statement provides guidance on the accounting and financial reporting for subscription-based information technology arrangements (SBITAs) by a government. The new standard is effective for periods beginning after June 15, 2022. The Enterprise will implement the provisions of Statement No. 96 in fiscal year 2023.

4) In April 2022, the GASB issued Statement No. 99, *Omnibus 2022*. This Statement enhances comparability in accounting and financial reporting and to improve the consistency of authoritative literature by addressing (1) practice issues that have been identified during implementation and application of certain GASB Statements and (2) accounting and financial reporting for financial guarantees. The new standard is effective for periods beginning after June 15, 2023. The Enterprise will implement the provisions of Statement No. 99 in fiscal year 2024.

5) In June 2022, the GASB issued Statement No. 100, *Accounting Changes and Error Corrections*. This Statement enhances accounting and financial reporting requirements for accounting changes and error corrections to provide more understandable, reliable, relevant, consistent, and comparable information for making decisions or assessing accountability. The new standard is effective for periods beginning after June 15, 2023. The Enterprise will implement the provisions of Statement No. 100 in fiscal year 2024.

6) In June 2022, the GASB issued Statement No. 101, *Compensated Absences*. This Statement is to better meet the information needs of financial statement users by updating the recognition and measurement guidance for compensated absences. The new standard is effective for periods beginning after December 15, 2023. The Enterprise will implement the provisions of Statement No. 101 in fiscal year 2025.

(x) *Reclassifications*

The Hetch Hetchy Enterprise has reclassified certain amounts relating to the prior period to conform to its current period presentation. These reclassifications had no effect on previously reported changes in net position.

(3) Cash, Cash Equivalents, and Investments

Hetch Hetchy's cash, cash equivalents, and investments with the City Treasury are invested in an unrated City pool pursuant to investment policy guidelines established by the City Treasurer. The objectives of the policy guidelines are, in order of priority, preservation of capital, liquidity, and yield. The policy addresses soundness of financial institutions in which the City will deposit funds, types of investment instruments as permitted by the California Government Code, and the percentage of the portfolio, which may be invested in certain instruments with longer terms to maturity. The City Treasurer allocates income from the investment of pooled cash at month-end in proportion to Hetch Hetchy's average daily cash balances. The primary objectives of Hetch Hetchy's investment policy are consistent with the City's policy.

(Dollars in thousands, unless otherwise stated)

Restricted assets are held by an independent trustee outside the City's investment pool. The assets are held for the purpose of paying future interest and principal on the bonds and for eligible capital project expenditures. The balances as of June 30, 2022 and 2021 were $14,052 and $3,843, respectively. The Enterprise held all investments in guaranteed investment contracts, treasury and government obligations, commercial paper, corporate bonds, and notes, as well as money market mutual funds consisting of treasury and government obligations. The balance as of June 30, 2022 included 2021 Series AB bond proceeds of $10,346, 2015 Series A bond proceeds of $2,194, certificates of participation proceeds of $981, 2015 Series B bond proceeds of $516, $17 held at a commercial bank in a non-interest-bearing checking account that is covered by depository insurance, and commercial paper of $15. The balance as of June 30, 2021 included 2015 Series A bond proceeds of $2,193, certificates of participation proceeds of $1,115, $612 held at a commercial bank in a non-interest-bearing checking account that is covered by depository insurance, 2015 Series B bond proceeds of $516, and commercial paper of $19.

Hetch Hetchy did not have any unrealized gain and loss in the restricted cash and investments outside City Treasury as of June 30, 2022 and 2021.

Hetch Hetchy categorizes its fair value measurements within the fair value hierarchy established by GAAP. The hierarchy is based on the valuation inputs used to measure fair value of the assets. Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are significant other observable inputs; and Level 3 inputs are significant unobservable inputs. The inputs and techniques used for valuing securities are not necessarily an indication of risk associated with investing in those securities.

Commercial paper is valued using a variety of techniques such as matrix pricing; market corroborated pricing inputs such as yield curve, indices, and other market related data. Commercial paper, money market investments, and cash and cash equivalents are exempt from fair value treatment under GASB Statement No. 72.

The following is a summary of the Hetch Hetchy restricted and unrestricted cash and investments outside City Treasury and the fair value hierarchy as of June 30, 2022 and 2021.

Hetch Hetchy Cash and Investments outside City Treasury

					Fair Value Measurements Using		
Investments	Credit Ratings (S&P/Moody's)	June 30, 2022 Maturities	June 30, 2022 Fair Value	Investments exempt from fair value	Quoted prices in active markets for identical assets (Level 1)	Significant other observable inputs (Level 2)	Unobservable Inputs (Level 3)
Hetchy Water							
Cash and Cash Equivalents	N/A		$ 1	1		–	–
Total Cash and Investments outside City Treasury			$ 1	1	–	–	–
Hetchy Power							
U.S. Treasury Money Market Funds	AAAm/Aaa-mf	< 90 days	$ 14,037	14,037	–	–	–
Cash and Cash Equivalents	N/A		15	15	–	–	–
Total Restricted Cash and Investments outside City Treasury			$ 14,052	14,052	–	–	–
Cash and Cash Equivalents	N/A		$ 16	16	–	–	–
Total Cash and Investments outside City Treasury			$ 16	16	–	–	–

(Dollars in thousands, unless otherwise stated)

Hetch Hetchy Cash and Investments outside City Treasury

Investments	Credit Ratings (S&P/Moody's)	June 30, 2021 Maturities	June 30, 2021 Fair Value	Investments exempt from fair value	Fair Value Measurements Using: Quoted prices in active markets for identical assets (Level 1)	Significant other observable inputs (Level 2)	Unobservable Inputs (Level 3)
Hetchy Water							
Cash and Cash Equivalents	N/A		$ 1	1	–	–	–
Total Cash and Cash Equivalents outside City Treasury			$ 1	1	–	–	–
Hetchy Power							
U.S. Treasury Money Market Funds	AAAm/Aaa-mf	< 90 days	$ 3,824	3,824	–	–	–
Cash and Cash Equivalents	N/A		19	19	–	–	–
Total Restricted Cash and Investments outside City Treasury			$ 3,843	3,843	–	–	–
Cash and Cash Equivalents	N/A		$ 611	611	–	–	–
Total Cash and Cash Equivalents outside City Treasury			$ 611	611	–	–	–

For fiscal year 2022, proceeds from 2021 Series AB and 2015 Series AB bonds held as restricted cash and investments outside City Treasury in the amount of $13,056 were invested in U.S. Treasury Money Market with maturity date less than 90 days. For fiscal year 2021, proceeds from 2015 Series A and B bonds held as restricted cash and investments outside City Treasury in the amount of $2,709 were invested in U.S. Treasury Money Market with maturity date less than 90 days. The credit ratings of the U.S. Treasury Money Market as of June 30, 2022 and 2021 were "AAAm" by S&P and "Aaa-mf" by Moody's.

Hetch Hetchy's cash, cash equivalents, and investments are shown on the accompanying Statements of Net Position as of June 30, 2022 and 2021:

	Hetchy Water	Hetchy Power	CleanPowerSF	Total 2022
Current assets:				
Cash and investments with City Treasury	$ 94,190	189,641	56,234	340,065
Cash and investments outside City Treasury	1	16	—	17
Restricted cash and investments outside City Treasury	—	5,228	—	5,228
Non-current assets:				
Restricted cash and investments outside City Treasury	—	8,824	—	8,824
Total cash, cash equivalents, and investments	$ 94,191	203,709	56,234	354,134

	Hetchy Water	Hetchy Power	CleanPowerSF	Total 2021
Current assets:				
Cash and investments with City Treasury	$ 89,373	190,719	90,838	370,930
Cash and investments outside City Treasury	1	611	—	612
Restricted cash and investments outside City Treasury	—	153	—	153
Non-current assets:				
Restricted cash and investments with City Treasury	6,990	5,241	—	12,231
Restricted cash and investments outside City Treasury	—	3,690	—	3,690
Total cash, cash equivalents, and investments	$ 96,364	200,414	90,838	387,616

The following table shows the percentage distribution of the City's pooled investment by maturity:

Fiscal years ended June 30	Investment maturities (in months): Under 1	1 to less than 6	6 to less than 12	12 to 60
2022	20.2%	14.0%	14.9%	50.9%
2021	14.5%	27.6%	29.7%	28.2%

(Dollars in thousands, unless otherwise stated)

(4) Capital Assets

Capital assets with a useful life of 50 years or greater include buildings and structures, reservoirs, dams, power stations, certain water mains and pipelines, transmission and distribution systems, tunnels, and bridges.

a) Hetch Hetchy capital assets as of June 30, 2022 and 2021 consist of the following:

	2021	Increases	Decreases	2022
Capital assets not being depreciated and amortized:				
Land and rights-of-way	$ 5,181	–	–	5,181
Intangible assets	1,437	–	–	1,437
Construction work in progress	206,508	140,513	(30,491) *	316,530
Total capital assets not being depreciated and amortized	213,126	140,513	(30,491)	323,148
Capital assets being depreciated and amortized:				
Facilities and improvements	782,963	26,982	–	809,945
Intangible assets	45,715	–	–	45,715
Machinery and equipment	144,323	4,005	(87)	148,241
Total capital assets being depreciated and amortized	973,001	30,987 *	(87)	1,003,901
Less accumulated depreciation and amortization for:				
Facilities and improvements	(405,446)	(18,285)	–	(423,731)
Intangible assets	(22,220)	(460)	–	(22,680)
Machinery and equipment	(88,924)	(5,158)	87	(93,995)
Total accumulated depreciation and amortization	(516,590)	(23,903)	87	(540,406)
Total capital assets being depreciated and amortized, net	456,411	7,084	–	463,495
Total capital assets, net	$ 669,537	147,597	(30,491)	786,643

* Decrease in construction in progress included $655 in capital project write-offs, mainly related to Hope San Francisco Project in Sunnydale and Potrero. The remaining difference of $1,151 was offset by direct additions to machinery and equipment.

	2020	Increases	Decreases	2021
Capital assets not being depreciated and amortized:				
Land and rights-of-way	$ 5,181	–	–	5,181
Intangible assets	1,437	–	–	1,437
Construction work in progress	189,077	92,645	(75,214) *	206,508
Total capital assets not being depreciated and amortized	195,695	92,645	(75,214)	213,126
Capital assets being depreciated and amortized:				
Facilities and improvements	723,182	59,781	–	782,963
Intangible assets	45,715	–	–	45,715
Machinery and equipment	136,573	7,750	–	144,323
Total capital assets being depreciated and amortized	905,470	67,531 *	–	973,001
Less accumulated depreciation and amortization for:				
Facilities and improvements	(389,294)	(16,152)	–	(405,446)
Intangible assets	(21,759)	(461)	–	(22,220)
Machinery and equipment	(83,901)	(5,023)	–	(88,924)
Total accumulated depreciation and amortization	(494,954)	(21,636)	–	(516,590)
Total capital assets being depreciated and amortized, net	410,516	45,895	–	456,411
Total capital assets, net	$ 606,211	138,540	(75,214)	669,537

* Decrease in construction work in progress is greater than increase in capital assets being depreciated explained by $8,384 in capital project write-offs, mainly related to Bay Corridor Project, Transmission and Distribution System Project, and Treasure Island Capital Improvement Project. The remaining difference of $701 was offset by direct additions to machinery and equipment.

(Dollars in thousands, unless otherwise stated)

b) Hetchy Water capital assets as of June 30, 2022 and 2021 consist of the following:

		2021	Increases	Decreases	2022
Capital assets not being depreciated and amortized:					
Land and rights-of-way	$	3,232	—	—	3,232
Intangible assets		6	—	—	6
Construction work in progress		35,333	29,654	(10,849) *	54,138
Total capital assets not being depreciated and amortized		38,571	29,654	(10,849)	57,376
Capital assets being depreciated and amortized:					
Facilities and improvements		295,968	10,148	—	306,116
Intangible assets		20,522	—	—	20,522
Machinery and equipment		27,518	865	—	28,383
Total capital assets being depreciated and amortized		344,008	11,013 *	—	355,021
Less accumulated depreciation and amortization for:					
Facilities and improvements		(174,695)	(5,144)	—	(179,839)
Intangible assets		(9,947)	(207)	—	(10,154)
Machinery and equipment		(20,456)	(941)	—	(21,397)
Total accumulated depreciation and amortization		(205,098)	(6,292)	—	(211,390)
Total capital assets being depreciated and amortized, net		138,910	4,721	—	143,631
Total capital assets, net	$	177,481	34,375	(10,849)	201,007

* Decrease in construction in progress included $7 in capital project write-offs, mainly related to Hetchy Water's share of road improvement projects. The remaining difference of $171 was offset by direct additions to machinery and equipment.

		2020	Increases	Decreases	2021
Capital assets not being depreciated and amortized:					
Land and rights-of-way	$	3,232	—	—	3,232
Intangible assets		6	—	—	6
Construction work in progress		24,328	22,586	(11,581) *	35,333
Total capital assets not being depreciated and amortized		27,566	22,586	(11,581)	38,571
Capital assets being depreciated and amortized:					
Facilities and improvements		284,480	11,488	—	295,968
Intangible assets		20,522	—	—	20,522
Machinery and equipment		27,303	215	—	27,518
Total capital assets being depreciated and amortized		332,305	11,703 *	—	344,008
Less accumulated depreciation and amortization for:					
Facilities and improvements		(169,874)	(4,821)	—	(174,695)
Intangible assets		(9,739)	(208)	—	(9,947)
Machinery and equipment		(19,476)	(980)	—	(20,456)
Total accumulated depreciation and amortization		(199,089)	(6,009)	—	(205,098)
Total capital assets being depreciated and amortized, net		133,216	5,694	—	138,910
Total capital assets, net	$	160,782	28,280	(11,581)	177,481

* Decrease in construction in progress included $51 in capital project write-offs, mainly related to Hetchy Water's share of road improvement projects and 2018 Moccasin Strom project. The remaining difference of $173 was offset by direct additions to machinery and equipment.

(Dollars in thousands, unless otherwise stated)

c) Hetchy Power capital assets as of June 30, 2022 and 2021 consist of the following:

	2021	Increases	Decreases	2022
Capital assets not being depreciated and amortized:				
Land and rights-of-way	$ 1,949	–	–	1,949
Intangible assets	1,431	–	–	1,431
Construction work in progress	171,175	110,859	(19,642) *	262,392
Total capital assets not being depreciated and amortized	174,555	110,859	(19,642)	265,772
Capital assets being depreciated and amortized:				
Facilities and improvements	486,995	16,834	–	503,829
Intangible assets	25,193	–	–	25,193
Machinery and equipment	116,805	3,140	(87)	119,858
Total capital assets being depreciated and amortized	628,993	19,974 *	(87)	648,880
Less accumulated depreciation and amortization for:				
Facilities and improvements	(230,751)	(13,141)	–	(243,892)
Intangible assets	(12,273)	(253)	–	(12,526)
Machinery and equipment	(68,468)	(4,217)	87	(72,598)
Total accumulated depreciation and amortization	(311,492)	(17,611)	87	(329,016)
Total capital assets being depreciated and amortized, net	317,501	2,363	–	319,864
Total capital assets, net	$ 492,056	113,222	(19,642)	585,636

* Decrease in construction in progress included $648 in capital project write-offs, mainly related to Hope San Francisco Project in Sunnydale and Potrero. The remaining difference of $980 was offset by direct additions to machinery and equipment.

	2020	Increases	Decreases	2021
Capital assets not being depreciated and amortized:				
Land and rights-of-way	$ 1,949	–	–	1,949
Intangible assets	1,431	–	–	1,431
Construction work in progress	164,749	70,059	(63,633) *	171,175
Total capital assets not being depreciated and amortized	168,129	70,059	(63,633)	174,555
Capital assets being depreciated and amortized:				
Facilities and improvements	438,702	48,293	–	486,995
Intangible assets	25,193	–	–	25,193
Machinery and equipment	109,270	7,535	–	116,805
Total capital assets being depreciated and amortized	573,165	55,828 *	–	628,993
Less accumulated depreciation and amortization for:				
Facilities and improvements	(219,420)	(11,331)	–	(230,751)
Intangible assets	(12,020)	(253)	–	(12,273)
Machinery and equipment	(64,425)	(4,043)	–	(68,468)
Total accumulated depreciation and amortization	(295,865)	(15,627)	–	(311,492)
Total capital assets being depreciated and amortized, net	277,300	40,201	–	317,501
Total capital assets, net	$ 445,429	110,260	(63,633)	492,056

* Decrease in construction work in progress is greater than increase in capital assets being depreciated explained by $8,333 in capital project write-offs, mainly related to Bay Corridor Project, Transmission and Distribution System Project, and Treasure Island Capital Improvement Project. The remaining difference of $528 was offset by direct additions to machinery and equipment.

GASB Statement No. 62, *Codification of Accounting and Financial Reporting Guidance Contained in Pre-November 30, 1989 Financial Accounting Standards Board (FASB) and American Institute of Certified Public Accountants (AICPA) Pronouncements*, requires that interest expense incurred during construction of assets be capitalized. Per the implementation of GASB Statement No. 89, *Accounting for Interest Cost Incurred Before the End of a Construction Period*, no interest was capitalized to construction in progress beginning in fiscal year 2022.

(Dollars in thousands, unless otherwise stated)

Interest included in the construction work in progress and total interest expense incurred during the years ended June 30, 2022 and 2021 are as follows:

Hetchy Power		2022		Restated 2021**
Interest expensed	$	5,624		1,972
Interest included in construction work in progress		—	*	1,083
Total interest incurred	$	5,624		3,055

*Per the implementation of GASB Statement No. 89, *Accounting for Interest Cost Incurred Before the End of a Construction Period.*
**Restated per the implementation of GASB Statement No. 87, *Leases.*

(5) Restricted Assets

Pursuant to the Hetchy Power Trust Indenture (the "Indenture"), established in fiscal year 2015, net revenues of the Hetchy Power are pledged first to the 2015 Series AB Bonds and 2021 Series AB Bonds, and have a priority lien on the pledge of net revenues to the outstanding CREBs, QECBs, and NCREBs (the "Subordinate Obligations"). The Lease/Purchase Agreements for the Subordinate Obligations pledge the net revenues of the Hetchy Power to these bonds, and such pledge is subordinate in lien to the net revenues pledge for the 2015 Series AB Bonds and 2021 Series AB Bonds (the "Bonds" or "Bond").

In the Indenture, the SFPUC covenants and agrees that it will pay into the Revenue Fund as received all Revenues of Hetchy Power and shall be used and applied, as provided by the Indenture, solely for the purposes of operating and maintaining Hetchy Power and paying all costs, charges, and expenses in connection therewith and for the purpose of making repairs, renewals, and replacements to Hetchy Power and constructing additions, betterments, and extensions thereto.

The Indenture provides that Revenues deposited in the Revenue Fund shall be disbursed in the following order of priority:

1. The payment of operation and maintenance expenses;
2. Any priority reconstruction and replacement fund deposits;
3. Deposit in the interest account of each Bond Fund;
4. Deposit in the bond retirement account of each Bond Fund;
5. Deposit in the reserve fund;
6. (i) Payment of principal and premium, if any, and interest on any Subordinate Obligations; (ii) deposit into a reserve fund securing any Subordinate Obligations; (iii) Swap Agreement payments pursuant to Swap Agreements entered into by the SFPUC with respect to any Subordinate Obligations; and (iv) payment to any financial institution or insurance company providing any letter of credit, line of credit, or other credit or liquidity facility, including municipal bond insurance and guarantees, that secures the payment of principal or interest on any Subordinate Obligations; in each case in any order of priority within this paragraph which may be hereafter established by the SFPUC resolution;
7. Any additional reconstruction and replacement fund deposits into the reconstruction and replacement fund;
8. Any necessary or desirable capital additions or improvements to the Hetchy Power;
9. Any payment under a Take-or-Pay Power Purchase Agreement that does not constitute an operation and maintenance expense;
10. Any payment under a Swap Agreement that does not constitute a Swap Agreement payment; and
11. Any other lawful purpose of the SFPUC.

(Dollars in thousands, unless otherwise stated)

In the Indenture, the SFPUC covenants and agrees to transfer to the Trustee for deposit in the Interest Account of each applicable Bond Fund all Refundable Credits received by the SFPUC.

In accordance with the Agreements, Hetch Hetchy maintains certain restricted cash and investment balances in trust.

(a) Hetchy Water has the following restricted assets held in trust as of June 30, 2022 and 2021:

		2022	2021
Cash and investments with City Treasury:			
Hetch Hetchy bond construction fund	$	–	6,990
Total restricted assets	$	–	6,990

(b) Hetchy Power has the following restricted assets held in trust as of June 30, 2022 and 2021:

		2022	2021
Cash and investments with City Treasury:			
Hetch Hetchy bond construction fund	$	–	5,241
Cash and investments outside City Treasury:			
2009 Series C Certificates of participation - 525 Golden Gate		223	223
2009 Series D Certificates of participation - 525 Golden Gate		758	892
2015 Series A Revenue Bonds		2,194	2,193
2015 Series B Revenue Bonds		516	516
2021 Series AB Revenue Bonds		10,346	–
Commercial Paper		15	19
Total restricted cash and investments outside City Treasury		14,052	3,843
Interest and other receivables:			
Hetch Hetchy bond construction fund		4,303	11,800
Total restricted assets	$	18,355	20,884

Restricted assets listed above as cash and investments with City Treasury are held in fund accounts within the Hetch Hetchy Revenue Fund.

(6) Short-Term Debt

Effective March 2019, under Charter Sections 9.107(6) and 9.107(8), and 2018 Proposition A, the Commission and Board of Supervisors authorized the issuance of up to $250,000 in commercial paper notes for the purpose of reconstructing, replacing, expanding, repairing or improving power facilities of Hetchy Power. Interest rates for the commercial paper ranged from 0.1% to 1.1% and 0.1% to 0.2% in fiscal years 2022 and 2021, respectively. The Enterprise had $40,019 and $114,671 commercial paper outstanding as of June 30, 2022 and 2021, respectively. The Enterprise had $209,981 and $135,329 in unused authorization as of June 30, 2022 and 2021, respectively.

In accordance with GASB Statement No. 88, *Certain Disclosures Related to Debt, Including Direct Borrowings and Direct Placements*, Significant Events of default as specified in the Reimbursement Agreements include 1) non-payment, 2) material breach of warranty, representation, or other non-remedied breach of covenants as specified in the respective agreements and 3) bankruptcy, which may result in all outstanding obligations to be immediately due and payable (unless waived by the respective Bank, if applicable); or issuance of a No-Issuance Notice, reduction in credit to outstanding amount plus interest coverage, and/or termination of the respective agreement. As of June 30, 2022, there were no such events described herein.

(Dollars in thousands, unless otherwise stated)

(7) Changes in Long-Term Liabilities

a) Hetch Hetchy's long-term liability activities for the years ended June 30, 2022 and 2021 are as follows:

	Interest rate	Maturity (Calendar Year)	Restated 2021*	Additions	Reductions	2022	Due within one year
Bonds:							
Clean Renewable Energy Bonds	0.00 %	2022	$ 843	—	(422)	421	421
Qualified Energy Conservation Bonds	4.74	2027	3,687	—	(549)	3,138	555
New Clean Renewable Energy Bonds 2015	4.62	2032	1,779	—	(142)	1,637	146
2015 Series A Revenue Bonds	4.00 - 5.00	2045	32,025	—	—	32,025	—
2015 Series B Revenue Bonds	3.00 - 4.00	2026	4,550	—	(815)	3,735	850
2021 Series A Revenue Bonds	4.00 - 5.00	2052	—	74,280	—	74,280	—
2021 Series B Revenue Bonds	4.00 - 5.00	2052	—	49,720	—	49,720	—
Less issuance discount			(20)	—	14	(6)	(6)
Add issuance premiums			3,448	27,022	(934)	29,536	—
Total bonds payable			46,312	151,022	(2,848)	194,486	1,966
2009 Series C Certificates of participation (COPs)	2.00 - 5.00	2022	830	—	(405)	425	425
2009 Series C COPs issuance premiums			8	—	(6)	2	2
2009 Series D COPs (Build America)	6.36 - 6.49	2041	12,593	—	—	12,593	—
Other post-employment benefits obligations			35,006	5,135	(6,232)	33,909	—
Net pension liability			62,219	—	(62,219)	—	—
Accrued vacation and sick leave			6,202	2,869	(2,759)	6,312	3,060
Accrued workers' compensation			3,238	555	(315)	3,478	615
Damage claims liability			1,639	3,840	(3,797)	1,682	601
Due to other City departments			369	11	—	380	380
Lease liability			749	—	(380)	369	238
Unearned revenues, refunds, and other			16,159	23,113	(19,215)	20,057	10,143
Total			$ 185,324	186,545	(98,176)	273,693	17,430

	Interest rate	Maturity (Calendar Year)	2020	Additions	Reductions	Restated 2021*	Due within one year
Bonds:							
Clean Renewable Energy Bonds	0.00 %	2022	$ 1,265	—	(422)	843	422
Qualified Energy Conservation Bonds	4.74	2027	4,229	—	(542)	3,687	549
New Clean Renewable Energy Bonds 2012	4.74	2020	130	—	(130)	—	—
New Clean Renewable Energy Bonds 2015	4.62	2032	3,190	—	(1,411)	1,779	142
2015 Series A Revenue Bonds	4.00 - 5.00	2045	32,025	—	—	32,025	—
2015 Series B Revenue Bonds	3.00 - 4.00	2026	5,335	—	(785)	4,550	815
Less issuance discount			(34)	—	14	(20)	—
Add issuance premiums			3,668	—	(220)	3,448	—
Total bonds payable			49,808	—	(3,496)	46,312	1,928
2009 Series C Certificates of participation (COPs)	2.00 - 5.00	2022	1,214	—	(384)	830	405
2009 Series C COPs issuance premiums			21	—	(13)	8	—
2009 Series D COPs (Build America)	6.36 - 6.49	2041	12,593	—	—	12,593	—
Other post-employment benefits obligations			38,530	5,646	(9,170)	35,006	—
Net pension liability			49,531	28,918	(16,230)	62,219	—
Accrued vacation and sick leave			4,894	2,932	(1,624)	6,202	3,041
Accrued workers' compensation			3,387	113	(262)	3,238	575
Damage claims liability			2,886	4,843	(6,090)	1,639	633
Due to other City departments			840	—	(471)	369	369
Lease liability			1,126	—	(377)	749	380
Unearned revenues, refunds, and other			9,117	28,750	(21,708)	16,159	6,191
Total			$ 173,947	71,202	(59,825)	185,324	13,522

*Restated per Governmental Accounting Standards Board (GASB) Statement No. 87, *Leases*.

(Dollars in thousands, unless otherwise stated)

b) Hetchy Water's long-term liability activities for the years ended June 30, 2022 and 2021 are as follows:

	Restated 2021*	Additions	Reductions	2022	Due within one year
Other post-employment benefits obligations	$ 14,444	1,921	(2,125)	14,240	–
Net pension liability	26,645	–	(26,645)	–	–
Accrued vacation and sick leave	2,185	749	(765)	2,169	1,034
Accrued workers' compensation	1,120	233	(125)	1,228	215
Damage claims liability	525	253	(151)	627	228
Lease liability	78	–	(16)	62	3
Unearned revenues, refunds, and other	138	14	(18)	134	24
Total	$ 45,135	3,170	(29,845)	18,460	1,504

	2020	Additions	Reductions	Restated 2021*	Due within one year
Other post-employment benefits obligations	$ 16,350	1,818	(3,724)	14,444	–
Net pension liability	21,477	12,119	(6,951)	26,645	–
Accrued vacation and sick leave	1,646	1,034	(495)	2,185	1,059
Accrued workers' compensation	1,187	18	(85)	1,120	197
Damage claims liability	558	478	(511)	525	218
Due to other City departments	240	–	(240)	–	–
Lease liability	93	–	(15)	78	16
Unearned revenues, refunds, and other	627	629	(1,118)	138	22
Total	$ 42,178	16,096	(13,139)	45,135	1,512

*Restated per Governmental Accounting Standards Board (GASB) Statement No. 87, *Leases*.

c) Hetchy Power's long-term liability activities for the years ended June 30, 2022 and 2021 are as follows:

	Interest rate	Maturity (Calendar Year)	Restated 2021*	Additions	Reductions	2022	Due within one year
Bonds:							
Clean Renewable Energy Bonds	0.00 %	2022	$ 843	–	(422)	421	421
Qualified Energy Conservation Bonds	4.74	2027	3,687	–	(549)	3,138	555
New Clean Renewable Energy Bonds 2015	4.62	2032	1,779	–	(142)	1,637	146
2015 Series A Revenue Bonds	4.00 - 5.00	2045	32,025	–	–	32,025	–
2015 Series B Revenue Bonds	3.00 - 4.00	2026	4,550	–	(815)	3,735	850
2021 Series A Revenue Bonds	4.00 - 5.00	2052	–	74,280	–	74,280	–
2021 Series B Revenue Bonds	4.00 - 5.00	2052	–	49,720	–	49,720	–
Less issuance discount			(20)	–	14	(6)	(6)
Add issuance premiums			3,448	27,022	(934)	29,536	–
Total bonds payable			46,312	151,022	(2,848)	194,486	1,966
2009 Series C Certificates of participation (COPs)	2.00 - 5.00	2022	830	–	(405)	425	425
2009 Series C COPs issuance premiums			8	–	(6)	2	2
2009 Series D COPs (Build America)	6.36 - 6.49	2041	12,593	–	–	12,593	–
Other post-employment benefits obligations			17,653	2,347	(2,595)	17,405	–
Net pension liability			32,566	–	(32,566)	–	–
Accrued vacation and sick leave			3,617	1,856	(1,876)	3,597	1,747
Accrued workers' compensation			2,118	322	(190)	2,250	400
Damage claims liability			1,108	2,005	(2,090)	1,023	358
Due to other City departments			369	11	–	380	380
Lease liability			94	–	(19)	75	3
Unearned revenues, refunds, and other			5,993	8,410	(7,676)	6,727	5,923
Total			$ 123,261	165,973	(50,271)	238,963	11,204

(Dollars in thousands, unless otherwise stated)

	Interest rate	Maturity (Calendar Year)	2020	Additions	Reductions	Restated 2021*	Due within one year
Bonds:							
Clean Renewable Energy Bonds	0.00 %	2022	$ 1,265	—	(422)	843	422
Qualified Energy Conservation Bonds	4.74	2027	4,229	—	(542)	3,687	549
New Clean Renewable Energy Bonds 2012	4.74	2020	130	—	(130)	—	—
New Clean Renewable Energy Bonds 2015	4.62	2032	3,190	—	(1,411)	1,779	142
2015 Series A Revenue Bonds	4.00 - 5.00	2045	32,025	—	—	32,025	—
2015 Series B Revenue Bonds	3.00 - 4.00	2026	5,335	—	(785)	4,550	815
Less issuance discount			(34)	—	14	(20)	—
Add issuance premiums			3,668	—	(220)	3,448	—
Total bonds payable			49,808	—	(3,496)	46,312	1,928
2009 Series C Certificates of participation (COPs)	2.00 - 5.00	2022	1,214	—	(384)	830	405
2009 Series C COPs issuance premiums			21	—	(13)	8	—
2009 Series D COPs (Build America)	6.36 - 6.49	2041	12,593	—	—	12,593	—
Other post-employment benefits obligations			19,983	2,223	(4,553)	17,653	—
Net pension liability			26,249	14,812	(8,495)	32,566	—
Accrued vacation and sick leave			2,957	1,763	(1,103)	3,617	1,777
Accrued workers' compensation			2,200	95	(177)	2,118	378
Damage claims liability			2,222	4,212	(5,326)	1,108	409
Due to other City departments			600	—	(231)	369	369
Lease liability			113	—	(19)	94	19
Unearned revenues, refunds, and other			7,642	8,560	(10,209)	5,993	5,141
Total			$ 125,602	31,665	(34,006)	123,261	10,426

*Restated per Governmental Accounting Standards Board (GASB) Statement No. 87, *Leases*.

d) CleanPowerSF's long-term liability activities for the years ended June 30, 2022 and 2021 are as follows:

	Restated 2021*	Additions	Reductions	2022	Due within one year
Other post-employment benefits obligations	$ 2,909	867	(1,512)	2,264	—
Net pension liability	3,008	—	(3,008)	—	—
Accrued vacation and sick leave	400	264	(118)	546	279
Damage claims liability	6	1,582	(1,556)	32	15
Lease liability	577	—	(345)	232	232
Unearned revenues, refunds, and other	10,028	14,689	(11,521)	13,196	4,196
Total	$ 16,928	17,402	(18,060)	16,270	4,722

	2020	Additions	Reductions	Restated 2021*	Due within one year
Other post-employment benefits obligations	$ 2,197	1,605	(893)	2,909	—
Net pension liability	1,805	1,987	(784)	3,008	—
Accrued vacation and sick leave	291	135	(26)	400	205
Damage claims liability	106	153	(253)	6	6
Lease liability	920	—	(343)	577	345
Unearned revenues, refunds, and other	848	19,561	(10,381)	10,028	1,028
Total	$ 6,167	23,441	(12,680)	16,928	1,584

*Restated per Governmental Accounting Standards Board (GASB) Statement No. 87, *Leases*.

(a) *Clean Renewable Energy Bonds*

In November 2008, Hetchy Power issued $6,325 of taxable CREBs to finance the installation of solar energy equipment on City-owned facilities, including Chinatown Branch Library, Maxine Hall Medical Center, City Distribution Division Warehouse, North Point Wastewater Plant, Chinatown Public Health Center, Municipal Transportation Agency Woods, and Municipal Transportation Agency Ways and Structures. The CREBs were non-rated and privately-placed with Banc of America Leasing. The net effective interest rate on the CREBs, after the federal tax subsidy, is 0% through 2022. Hetchy Power began making principal payments in the amount of $422 on December 15, 2008 and will continue annual payments for 15 years until December 15, 2022. Funding for these payments will be guaranteed by net power revenues. Interest payments are not required, since the effective equivalent of interest on the bonds is paid in the form of federal tax credits in lieu of interest paid by the issuer.

(Dollars in thousands, unless otherwise stated)

The future annual debt service relating to the CREBs outstanding as of June 30, 2022 is as follows:

Fiscal year ending June 30:		Principal
2023	$	421
Less: Current portion		(421)
Less: Unamortized bond discount		(6)
Less: Current portion		6
Long-term portion as of June 30, 2022	$	–

(b) *Qualified Energy Conservation Bonds*

In December 2011, Hetchy Power issued $8,291 of taxable QECBs. The QECBs were issued to fund certain qualified green components for the SFPUC's 525 Golden Gate Headquarters project. The QECBs were non-rated and privately placed with Banc of America Leasing. The net effective interest rate on the QECBs, after the federal tax subsidy, is 1.2% through 2028.

The future annual debt service relating to the QECBs outstanding as of June 30, 2022 is as follows:

Fiscal years ending June 30:		Principal	Interest before subsidy	Federal interest subsidy*	Interest net of subsidy
2023	$	555	142	(100)	42
2024		562	116	(82)	34
2025		569	89	(63)	26
2026		576	62	(44)	18
2027		582	35	(24)	11
2028		294	7	(4)	3
		3,138	451	(317)	134
Less: Current portion		(555)			
Long-term portion as of June 30, 2022	$	2,583			

* The SFPUC received an IRS notice dated June 2, 2022 that the federal interest subsidy is reduced by 5.7% or a total reduction of $19 due to sequestration over the remaining life of the bonds assuming the sequestration rate will remain the same after fiscal year 2023.

(c) *New Clean Renewable Energy Bonds 2012*

In April 2012, Hetchy Power issued $6,600 of taxable NCREBs. The NCREBs were issued to fund certain qualified facilities that provide clean, renewable energy at Davies Symphony Hall, City Hall, and University Mound Reservoir. The NCREBs were non-rated and privately placed with Banc of America Leasing. The net effective interest rate on the NCREBs, after the federal tax subsidy, is 1.5% through 2021. $288 and $2,523 of principal were prepaid in fiscal years 2017 and 2016, respectively. There was no prepayment thereafter. 2012 NCREBs have been fully repaid as of June 30, 2021.

(d) *New Clean Renewable Energy Bonds 2015*

In October 2015, Hetchy Power issued $4,100 of taxable 2015 NCREBs. The 2015 NCREBs were issued to fund certain qualified clean, renewable energy solar generation facilities at the Marina Middle School and the San Francisco Police Academy. The 2015 NCREBs were non-rated and privately placed with Banc of America Leasing. The net effective interest rate on the 2015 NCREBs, after the federal tax subsidy, is 1.4% through 2033. $0 and $1,272 of principal were prepaid in fiscal years 2022 and 2021, respectively.

(Dollars in thousands, unless otherwise stated)

The future annual debt service relating to the 2015 NCREBs outstanding as of June 30, 2022 is as follows:

Fiscal years ending June 30:		Principal	Interest before subsidy	Federal interest subsidy*	Interest net of subsidy
2023	$	146	74	(49)	25
2024		148	67	(44)	23
2025		150	60	(40)	20
2026		152	53	(35)	18
2027		154	47	(31)	16
2028-2032		803	122	(81)	41
2033		84	2	(1)	1
		1,637	425	(281)	144
Less: Current portion		(146)			
Long-term portion as of June 30, 2022	$	1,491			

* The SFPUC received an IRS notice dated June 2, 2022 that the federal interest subsidy is reduced by 5.7% or a total reduction of $17 due to sequestration over the remaining life of the bonds assuming the sequestration rate will remain the same after fiscal year 2023.

(e) *Power Revenue Bonds 2015 Series A (Green) and Series B*

In May 2015, Hetchy Power issued tax-exempt revenue bonds, 2015 Series A (Green) in the amount of $32,025 with interest rates ranging from 4.0% to 5.0% and 2015 Series B in the amount of $7,530 with interest rates ranging from 3.0% to 4.0%. Proceeds from the bonds were used to finance reconstruction or replacement of existing facilities of the SFPUC's Hetch Hetchy project, to fund capitalized interest on the 2015 Series AB Bonds, to fund a debt service reserve account for the 2015 Series AB Bonds, and to pay costs of issuance of the 2015 Series AB bonds. The bonds were rated "A+" and "AA-" by S&P and Fitch, respectively. Final maturity for 2015 Series AB are November 1, 2045 and November 1, 2026, respectively. The true interest cost is 3.95%. As of June 30, 2022 and 2021, the outstanding principal amounts were $35,760 and $36,575, respectively.

The future annual debt service relating to the 2015 Series AB Bonds outstanding as of June 30, 2022 are as follows:

Hetchy Power - Power Revenue Bonds 2015 Series A (Green)

Fiscal years ending June 30:		Principal	Interest	Total
2023	$	–	1,593	1,593
2024		–	1,593	1,593
2025		–	1,593	1,593
2026		–	1,593	1,593
2027		830	1,576	2,406
2028-2032		5,645	7,121	12,766
2033-2037		7,205	5,522	12,727
2038-2042		9,190	3,482	12,672
2043-2046		9,155	943	10,098
		32,025	25,016	57,041
Add: Unamortized bond premium		3,119		
Long-term portion as of June 30, 2022	$	35,144		

(Dollars in thousands, unless otherwise stated)

Hetchy Power - Power Revenue Bonds 2015 Series B

Fiscal years ending June 30:		Principal	Interest	Total
2023	$	850	124	974
2024		880	93	973
2025		910	62	972
2026		945	25	970
2027		150	3	153
		3,735	307	4,042
Less: Current portion		(850)		
Add: Unamortized bond premium		114		
Long-term portion as of June 30, 2022	$	2,999		

(f) *Power Revenue Bonds 2021 Series A (Green) and Series B*

In December 2021, Hetchy Power issued tax-exempt revenue bonds, 2021 Series A (Green) in the amount of $74,280 with interest rates ranging from 4.0% to 5.0% and 2021 Series B in the amount of $49,720 with interest rates ranging from 4.0% to 5.0%. Proceeds from the bonds were used to refinance a portion of the costs of various capital projects benefiting the Power Enterprise, to fund capitalized interest on the 2021 Series AB Bonds, and to pay costs of issuance. The bonds were rated “AA” and “AA-” by S&P and Fitch, respectively. Final maturity for 2021 Series AB are November 1, 2051. The true interest cost is 2.64%. As of June 30, 2022 the outstanding principal amount was $124,000.

The future annual debt service relating to the 2021 Series AB Bonds outstanding as of June 30, 2022 are as follows:

Hetchy Power - Power Revenue Bonds 2021 Series A (Green)

Fiscal years ending June 30:		Principal	Interest	Total
2023	$	—	3,085	3,085
2024		—	3,085	3,085
2025		1,385	3,050	4,435
2026		1,455	2,979	4,434
2027		1,530	2,905	4,435
2028-2032		8,875	13,294	22,169
2033-2037		11,025	11,140	22,165
2038-2042		13,470	8,698	22,168
2043-2047		16,450	5,716	22,166
2048-2052		20,090	2,073	22,163
		74,280	56,025	130,305
Add: Unamortized bond premium		15,933		
Long-term portion as of June 30, 2022	$	90,213		

(Dollars in thousands, unless otherwise stated)

Hetchy Power - Power Revenue Bonds 2021 Series B

Fiscal years ending June 30:	Principal	Interest	Total
2023	$ –	2,045	2,045
2024	–	2,045	2,045
2025	585	2,030	2,615
2026	620	2,000	2,620
2027	650	1,969	2,619
2028-2032	3,765	9,308	13,073
2033-2037	4,755	8,363	13,118
2038-2042	5,945	7,295	13,240
2043-2047	9,900	5,920	15,820
2048-2052	23,500	2,426	25,926
	49,720	43,401	93,121
Add: Unamortized bond premium	10,370		
Long-term portion as of June 30, 2022	$ 60,090		

(g) *Certificates of Participation Issued for the 525 Golden Gate Headquarters Building*

In October 2009, the City issued $167,670 in certificates of participation to fund construction of the headquarters of the SFPUC at 525 Golden Gate Avenue. The 2009 Series C certificates were issued for $38,120 and 2009 Series D for $129,550 as “Build America Bonds” (BABs) on a taxable basis under the 2009 American Recovery and Reinvestment Act. The 2009 Series C certificates carry interest rates ranging from 2.0% to 5.0% and mature on November 1, 2022. The 2009 Series D certificates carry interest rates ranging from 6.4% to 6.5% and mature on November 1, 2041. After adjusting Series D for the federal interest subsidy, the true interest cost averages 3.4% and 4.3% for Series C and Series D certificates, respectively.

Under the terms of a Memorandum of Understanding between the City and the SFPUC dated October 1, 2009, the City conveyed the real property to the Trustee, the Bank of New York Mellon Trust Company, N.A., which was replaced by U.S. Bank in March 2014 under a property lease in exchange for the proceeds of the sale of the certificates. The Trustee has leased the property back to the City for the City’s use under a project lease. The City is obligated under the project lease to pay base rental payments and other payments to the Trustee each year during the 32-year term of the project lease. The Commission makes annual base rental payments to the City for the building equal to annual debt service on the certificates. It is anticipated these lease costs will be offset with reductions in costs associated with current office rental expense. Hetchy Power’s share is reflected on the Hetchy Power fund statements. There are no events of default stated in this memorandum of understanding.

The Power, Water, and Wastewater Enterprises have ownership interest in the building equal to their projected usage of space as follows: Water (73%), Wastewater (15%), and Power (12%). Similarly, each Enterprise is responsible for a portion of the annual base rental payment based on their ownership percentages less contributed equity. The percentage share of base rental payments for the Enterprises is as follows: Water (71.4%), Wastewater (18.9%), and Power (9.7%). The future annual debt service relating to the certificates of participation 2009 Series C and D outstanding as of June 30, 2022 are as follow:

Hetchy Power - Certificates of Participation 2009 Series C (Tax Exempt)

Fiscal years ending June 30:	Principal	Interest	Total
2023	$ 425	10	435
Less: Current portion	(425)		
Add: Unamortized bond premium	2		
Less: Current portion	(2)		
Long-term portion as of June 30, 2022	$ –		

(Dollars in thousands, unless otherwise stated)

Hetchy Power - Certificates of Participation 2009 Series D (Taxable BABs)

Fiscal years ending June 30:		Principal	Interest before subsidy	Federal interest subsidy*	Interest net of subsidy
2023	$	–	812	(268)	544
2024		445	798	(263)	535
2025		463	769	(254)	515
2026		483	739	(244)	495
2027		503	709	(234)	475
2028-2032		2,852	3,020	(997)	2,023
2033-2037		3,514	1,995	(658)	1,337
2038-2042		4,333	727	(240)	487
			9,569	(3,158)	6,411
Long-term portion as of June 30, 2022	$	12,593			

* The SFPUC received an IRS notice dated June 2, 2022 that the federal interest subsidy is reduced by 5.7% or a total reduction of $191 due to sequestration over the remaining life of the bonds assuming the sequestration rate will remain the same after fiscal year 2023.

(h) *Events of Default and Remedies*

In accordance with GASB Statement No. 88, *Certain Disclosures Related to Debt, Including Direct Borrowings and Direct Placements*, significant events of default as specified in the Power Enterprise Indenture (applicable to Power Revenue Bonds and energy bonds) and the Equipment Lease/Purchase Agreement include 1) non-payment, 2) material breach of warranty, representation, or indenture covenants (not cured within applicable grace periods) and 3) bankruptcy and insolvency events, which may result in the Trustee (upon written request by the majority of the owners (by aggregate amount of the bond obligations), declare the principal and the interest accrued thereon to be due and payable immediately. As of June 30, 2022 and 2021, there were no such events described herein.

(8) Revenue Pledge

Hetchy Power has pledged future power revenues to repay the 2008 CREBs, the 2011 QECBs, the 2012 NCREBs, and the 2015 NCREBs. Additionally, Hetchy Power has pledged future power revenues for 2015 Series AB and 2021 Series AB power revenue bonds. Proceeds from the bonds provided financing for various capital construction and facility energy efficiency projects. 2015 Series AB and 2021 Series AB power revenue bonds are payable through fiscal year 2046 and 2052, respectively, and are solely payable from net revenues of Hetchy Power on a senior lien basis to the 2008 CREBs, the 2011 QECBs, the 2012 NCREBs, and the 2015 NCREBs.

The original amount of bonds issued, total principal and interest remaining, principal and interest paid during fiscal years 2022 and 2021, applicable net revenues, and funds available for debt service are as follows:

Hetchy Power		2022	2021
Bonds issued with revenue pledge	$	182,271	64,871
Principal and interest remaining due at the end of the year		290,581	71,082
Principal and interest paid during the year*		3,928	5,368
Net revenues for the year ended June 30		54,310	10,609
Funds available for debt service		98,625	34,178

*Per Indenture, debt service for coverage is calculated using the amount of principal and interest paid during the year for the 2015 Series AB and 2021 Series AB power revenue bonds net of capitalized interest if any, which have a senior lien on power enterprise revenues; principal and interest paid during the year for the 2015 Series AB and 2021 Series AB power revenue bonds was $2,565, net of capitalized interest.

(Dollars in thousands, unless otherwise stated)

(9) Leases

Hetch Hetchy has entered into long-term leases for office space and other equipment. The terms and conditions for theses leases varies, which ranges between 1 to 75 years.

A summary of intangible right-to-use leases during the years ended June 30, 2022 and 2021 are as follows:

		2021	Increases	Decreases	Remeasurements	2022
Hetch Hetchy						
Right-to-use assets: Building/facility equipment	$	1,126	—	(58)	—	1,068
Total lease assets		1,126	—	(58)	—	1,068
Less accumulated amortization for:						
Building/facility equipment		(387)	(375)	58	—	(704)
Total accumulated amortization		(387)	(375)	58	—	(704)
Total lease assets, net	$	739	(375)	—	—	364
Hetch Water						
Right-to-use assets: Building/facility equipment	$	93	—	(26)	—	67
Total lease assets		93	—	(26)	—	67
Less accumulated amortization for:						
Building/facility equipment		(19)	(13)	26	—	(6)
Total accumulated amortization		(19)	(13)	26	—	(6)
Total lease assets, net	$	74	(13)	—	—	61
Hetch Power						
Right-to-use assets: Building/facility equipment	$	113	—	(32)	—	81
Total lease assets		113	—	(32)	—	81
Less accumulated amortization for:						
Building/facility equipment		(23)	(17)	32	—	(8)
Total accumulated amortization		(23)	(17)	32	—	(8)
Total lease assets, net	$	90	(17)	—	—	73
CleanPowerSF						
Right-to-use assets: Building/facility equipment	$	920	—	—	—	920
Total lease assets		920	—	—	—	920
Less accumulated amortization for:						
Building/facility equipment		(345)	(345)	—	—	(690)
Total accumulated amortization		(345)	(345)	—	—	(690)
Total lease assets, net	$	575	(345)	—	—	230

(Dollars in thousands, unless otherwise stated)

		2020	Increases	Decreases	Remeasurements	2021
Hetch Hetchy						
Right-to-use assets: Building/facility equipment	$	1,126	—	—	—	1,126
Total lease assets		1,126	—	—	—	1,126
Less accumulated amortization for:						
Building/facility equipment		—	(387)	—	—	(387)
Total accumulated amortization		—	(387)	—	—	(387)
Total lease assets, net	$	1,126	(387)	—	—	739
Hetch Water						
Right-to-use assets: Building/facility equipment	$	93	—	—	—	93
Total lease assets		93	—	—	—	93
Less accumulated amortization for:						
Building/facility equipment		—	(19)	—	—	(19)
Total accumulated amortization		—	(19)	—	—	(19)
Total lease assets, net	$	93	(19)	—	—	74
Hetch Power						
Right-to-use assets: Building/facility equipment	$	113	—	—	—	113
Total lease assets		113	—	—	—	113
Less accumulated amortization for:						
Building/facility equipment		—	(23)	—	—	(23)
Total accumulated amortization		—	(23)	—	—	(23)
Total lease assets, net	$	113	(23)	—	—	90
CleanPowerSF						
Right-to-use assets: Building/facility equipment	$	920	—	—	—	920
Total lease assets		920	—	—	—	920
Less accumulated amortization for:						
Building/facility equipment		—	(345)	—	—	(345)
Total accumulated amortization		—	(345)	—	—	(345)
Total lease assets, net	$	920	(345)	—	—	575

A summary of changes in the related lease liabilities during the years ended June 30, 2022 and 2021 are as follows:

Fiscal years		Beginning of year	Deductions	End of year	Due within one year
Hetch Hetchy					
2022	$	749	(380)	369	238
2021		1,126	(377)	749	380
Hetchy Water					
2022	$	78	(16)	62	3
2021		93	(15)	78	16
Hetchy Power					
2022	$	94	(19)	75	3
2021		113	(19)	94	19
CleanPowerSF					
2022	$	577	(345)	232	232
2021		920	(343)	577	345

(Dollars in thousands, unless otherwise stated)

Future annual lease payments as of the years ended June 30, 2022 and 2021 are as follows:

Hetchy Water

Fiscal years ending June 30:		Principal	Interest	Total
2023	$	3	1	4
2024		3	1	4
2025		3	1	4
2026		3	1	4
2027		3	1	4
2028-2032		17	4	21
2033-2037		18	3	21
2038-2042		12	1	13
		62	13	75
Less: Current portion		(3)		
Long-term portion as of June 30, 2022	$	59		

Hetchy Power

Fiscal years ending June 30:		Principal	Interest	Total
2023	$	3	2	5
2024		4	2	6
2025		4	1	5
2026		4	1	5
2027		4	1	5
2028-2032		20	5	25
2033-2037		23	3	26
2038-2042		13	1	14
		75	16	91
Less: Current portion		(3)		
Long-term portion as of June 30, 2022	$	72		

CleanPowerSF

Fiscal years ending June 30:		Principal	Interest	Total
2023	$	232	1	233
Less: Current portion		(232)		
Long-term portion as of June 30, 2022	$	–		

Hetchy Water

Fiscal years ending June 30:		Principal	Interest	Total
2022	$	16	2	18
2023		3	1	4
2024		3	1	4
2025		3	1	4
2026		3	1	4
2027-2031		16	5	21
2032-2036		18	3	21
2037-2041		16	1	17
		78	15	93
Less: Current portion		(16)		
Long-term portion as of June 30, 2021	$	62		

(Dollars in thousands, unless otherwise stated)

Hetchy Power

Fiscal years ending June 30:		Principal	Interest	Total
2022	$	19	2	21
2023		3	2	5
2024		4	2	6
2025		4	1	5
2026		4	1	5
2027-2031		20	6	26
2032-2036		22	3	25
2037-2041		18	1	19
		94	18	112
Less: Current portion		(19)		
Long-term portion as of June 30, 2021	$	75		

CleanPowerSF

Fiscal years ending June 30:		Principal	Interest	Total
2022	$	345	5	350
2023		232	1	233
		577	6	583
Less: Current portion		(345)		
Long-term portion as of June 30, 2021	$	232		

Variable Lease Payments – Variable lease payments, other than those payments that depend on an index or rate or are fixed in substance, are excluded from the measurement of the lease liability. Such amounts are recognized as lease expenses in the period in which the obligation for those payments is incurred.

Certain equipment or facility rental leases require Hetch Hetchy to make variable lease payments that based on usage, related to the property taxes levied on the lessor, and insurance payments made by the lessor; these amounts are generally determined annually. As of June 30, 2022, the amounts recognized as expense for variable lease payments not included in the measurement of the lease liability were $45 for Hetch Hetchy, of which $1 for Hetchy Water, $1 for Hetchy Power and $43 for CleanPowerSF. As of June 30, 2021, the amounts recognized as expense for variable lease payments not included in the measurement of the lease liability were $24 for CleanPowerSF and $0 for Hetchy Water and Hetchy Power.

(10) Other Non-Operating Revenues – Transbay Cable Construction and Licensing Fees

In 2007, the Board of Supervisors adopted the resolution to enter into two non-exclusive licenses with the Transbay Cable LLC (the Licensee) for the Transbay Cable Project. The Licensee proposed to install, operate, and maintain approximately 53 miles of high-voltage direct current transmission cable running from the City of Pittsburg to the City. The first license was a Construction License to install a 400 MW high-voltage transmission line, with a four-year term. The Licensee paid Hetchy Power $3,500 in Renewable Energy, Transmission and Grid Reliability. The Construction licensing fees were fully spent as of 2020.

The second license is an operational license for operation of the transmission line with 25-year term and an option to renew for 10 years. The Licensee agrees to pay Hetchy Power in excess of $20,000 in 10 separate installments of $2,000 annually with adjustments for inflation, as the “San Francisco Electric Reliability Payment” to implement, advance, promote, or enhance policies and projects consistent with City Energy Policies. The project came on line November 29, 2010 and cumulative revenues of $22,708 were recorded, with final payment of $2,574 received in fiscal year 2020. Per agreement, the SFPUC shall consult with Departments of Environment and Public Health, as well as community members, including the Power Plant Task Force, in developing its proposals to the Board of Supervisors on how to spend the San Francisco Electricity Reliability Payment, and shall consider specifically renewable energy, conservation, and environmental health programs, which benefit low-income, at-risk, and environmentally disadvantaged communities. The San Francisco Electricity Reliability Payment shall also be partly used for green jobs training and placement programs, which benefit low-income, at-risk, and environmentally disadvantaged communities. As of June 30, 2022, cumulative expenses of $11,136 have been incurred, with $1,525 and $1,254 in fiscal years 2022 and 2021, respectively.

(Dollars in thousands, unless otherwise stated)

(11) Employee Benefits

(a) *Pension Plan*

Retirement Plan – Hetch Hetchy participates in a cost-sharing multiple-employer defined benefit pension Plan (SFERS Plan). The SFERS Plan is administered by the San Francisco City and County Employees' Retirement System (SFERS). For purposes of measuring the net pension liability, deferred outflows/inflows of resources related to pensions, pension expense, information about the fiduciary net position of the SFERS Plan, and additions to/deductions from the SFERS Plan's fiduciary net position have been determined on the same basis as they are reported by the SFERS Plan. Contributions are recognized in the period in which they are due pursuant to legal requirements. Benefit payments (including refunds of employee contributions) are recognized when currently due and payable in accordance with the benefit terms. Investments are reported at fair value.

GASB Statement No. 68 requires that the SFERS Plan reported results must pertain to liability and asset information within certain defined timeframes. For this report, the following timeframes are used:

	Fiscal Year 2022	Fiscal Year 2021
Valuation Date (VD)	June 30, 2020 updated to June 30, 2021	June 30, 2019 updated to June 30, 2020
Measurement Date (MD)	June 30, 2021	June 30, 2020
Measurement Period (MP)	July 1, 2020 to June 30, 2021	July 1, 2019 to June 30, 2020

SFERS Plan – The City is an employer of the plan with a proportionate share of 94.64% as of June 30, 2021 (measurement date), 0.25% increased from prior year, and 94.39% as of June 30, 2020 (measurement date). Hetch Hetchy's allocation percentage was determined based on its employer contributions divided by the City's total employer contributions for fiscal years 2021 and 2020. Hetch Hetchy's net pension liability, deferred outflows/inflows of resources related to pensions, amortization of deferred outflows/inflows, and pension expense is based on its allocated percentage. Hetch Hetchy's allocation of the City's proportionate share was 1.33%, of which 0.57% for Hetchy Water, 0.69% for Hetchy Power, and 0.07% for CleanPowerSF as of June 30, 2021 (measurement date). Hetch Hetchy's allocation of the City's proportionate share was 1.22%, of which 0.52% for Hetchy Water, 0.64% for Hetchy Power, and 0.06% for CleanPowerSF as of June 30, 2020 (measurement date).

SFERS Plan Description – The Plan provides basic service retirement, disability, and death benefits based on specified percentages of defined final average monthly salary and provides annual cost-of-living adjustments (COLA) after retirement. The Plan also provides pension continuation benefits to qualified survivors. The City Charter and the Administrative Code are the authorities which establish and amend the benefit provisions and employer obligations of the Plan. The Retirement System issues a publicly available financial report that includes financial statements and required supplementary information for the Plan. That report may be obtained on the Retirement System's website or by writing to the San Francisco Employees' Retirement System, 1145 Market Street, 5th Floor, San Francisco, CA 94103 or by calling (415) 487-7000.

SFERS Benefits – The Retirement System provides service retirement, disability and death benefits based on specified percentages of defined final average monthly salary and annual COLA after retirement. Benefits and refunds are recognized when due and payable in accordance with the terms of the Plan. The Retirement System pays benefits according to the category of employment and the type of benefit coverage provided by the City. The four main categories of Plan members are:

a) Miscellaneous Non-Safety Members – staff, operational, supervisory, and all other eligible employees who are not in special membership categories.
b) Sheriff's Department and Miscellaneous Safety members – sheriffs assuming office on and after January 7, 2012, and undersheriffs, deputized personnel of the Sheriff's department, and miscellaneous safety employees hired on and after January 7, 2012.
c) Firefighter Members – firefighters and other employees whose principal duties are in fire prevention and suppression work or who occupy positions designated by law as firefighter member positions.
d) Police Members – police officers and other employees whose principal duties are in active law enforcement or who occupy positions designated by law as police member positions.

The membership groups and the related service retirement benefits are included in the Notes to the Basic Financial Statements of San Francisco Employees' Retirement System.

All members are eligible to apply for a disability retirement benefit, regardless of age, when they have 10 or more years of credited service and they sustain an injury or illness that prevents them from performing their duties. Safety members are eligible to apply for an industrial disability retirement benefit from their first day on the job if their disability is caused by an illness or injury that they receive while performing their duties.

All retired members receive a benefit adjustment each July 1, which is the Basic COLA. The majority of adjustments are determined by changes in Consumer Price Index with increases capped at 2%. The Plan provides for a Supplemental COLA in years when there are sufficient "excess" investment earnings in the Plan. The maximum benefit adjustment each July 1 is 3.5% including the Basic COLA. Effective July 1, 2012, voters approved changes in the criteria for payment of the Supplemental COLA benefit, so that Supplemental COLAs would only be paid when the Plan is also fully funded on a market value of assets basis. Certain provisions of this voter-approved proposition were challenged in the Courts. A decision by the California Courts modified the interpretation of the proposition. Effective July 1, 2012, members who retired before November 6, 1996 will receive a Supplemental COLA only when the Plan is also fully funded on a market value of assets basis. However, the "full funding" requirement does not apply to members who retired on or after November 6, 1996 and were hired before January 7, 2012. For all members hired before January 7, 2012, all Supplemental COLAs paid to them in retirement benefits will continue into the future even where an additional Supplemental COLA is not payable in any given year. For members hired on and after January 7, 2012, a Supplemental COLA will only be paid to retirees when the Plan is fully funded on a market value of asset basis and in addition for these members, Supplemental COLAs will not be permanent adjustments to retirement benefits. That is, in years when a Supplemental COLA is not paid, all previously paid Supplemental COLAs will expire.

Funding and Contribution Policy

SFERS Plan – Contributions are made by both the City and the participating employees. Employee contributions are mandatory as required by the Charter. Employee contribution rates varied from 7.5% to 13.0% as a percentage of gross covered salary in fiscal years 2021 and 2020. Most employee groups agreed through collective bargaining for employees to contribute the full amount of the employee contributions on a pretax basis. The City is required to contribute at an actuarially determined rate. Based on the July 1, 2020 actuarial report, the required employer contribution rate for fiscal year 2022 range from 19.91% to 24.41%. Based on the July 1, 2019 actuarial report, the required employer contribution rate for fiscal year 2021 range from 22.40% to 26.90%.

Employer contributions and employee contributions made by the employer to the Plan are recognized when due and the employer has made a formal commitment to provide the contributions. The City's proportionate share of employer contributions recognized by the Retirement System in fiscal years ended June 30, 2021 and 2020 (measurement years) were $791,736 and $701,307, respectively. Hetch Hetchy's allocation of employer contributions were $9,644, of which $4,130 for Hetchy Water, $5,048 for Hetchy Power, and $466 for CleanPowerSF for fiscal year 2021 (measurement period). Hetch Hetchy's allocation of employer contributions were $8,243, of which $3,574 for Hetchy Water, $4,369 for Hetchy Power, and $300 for CleanPowerSF for fiscal year 2020 (measurement period).

For the year ended June 30, 2022, the City's actuarial determined contribution was $729,578. Hetch Hetchy's share was $9,766, of which $4,149 for Hetchy Water, $5,071 for Hetchy Power, and $546 for CleanPowerSF for fiscal year 2022 and will be recognized as a reduction of the net pension liability in the subsequent fiscal period.

Pension (Assets)/Liabilities, Pension Expenses, and Deferred Outflows and Inflows of Resources Related to Pensions

Fiscal Year 2022

As of June 30, 2022, the City reported net pension assets (NPA) for its proportionate share of the net pension asset of the SFERS Plan of $2,446,564. The City's net pension asset for the Plan is measured as the proportionate share of the net pension asset. The net pension asset of the SFERS Plan is measured as of June 30, 2021 (measurement date), and the total pension (asset)/liability for the SFERS Plan used to calculate the net pension (asset)/liability was determined by an actuarial valuation as of June 30, 2020 rolled forward to June 30, 2021 using standard update procedures. The City's proportion of the net pension (asset)/liability for the SFERS Plan was based on a projection of the City's long-term share of contributions to the pension plan relative to the projected contributions of all participating employers, actuarially determined. Hetch Hetchy's allocation of the City's proportionate share of the net pension (asset)/liability for the SFERS Plan as of June 30, 2022 was ($32,749), of which ($13,912) for Hetchy Water, ($17,004) for Hetchy Power, and ($1,833) for CleanPowerSF.

For the year ended June 30, 2022, the City's recognized pension (benefit) was ($922,979), which includes Retirement Benefit Plan pension expense of $28,735. Hetch Hetchy's allocation of pension (benefit) including amortization of deferred outflows/inflows related pension items were ($4,058), of which ($1,816) for Hetchy Water, ($2,220) for Hetchy Power, and ($22) for CleanPowerSF. Pension (benefit) increased from the prior year, largely due to the amortization of deferrals.

(Dollars in thousands, unless otherwise stated)

At June 30, 2022, Hetch Hetchy's reported deferred outflows of resources and deferred inflows of resources related to pensions from the following source:

Schedules of Deferred Outflows and Inflows of Resources

Fiscal Year 2022	Deferred Outflows of Resources: Hetchy Water	Deferred Outflows of Resources: Hetchy Power	Deferred Outflows of Resources: CleanPowerSF	Deferred Outflows of Resources: Total	Deferred Inflows of Resources: Hetchy Water	Deferred Inflows of Resources: Hetchy Power	Deferred Inflows of Resources: CleanPowerSF	Deferred Inflows of Resources: Total
Pension contributions subsequent to the measurement date	$ 4,149	5,071	546	9,766	–	–	–	–
Differences between expected and actual experience	1,278	1,561	168	3,007	45	56	6	107
Changes in assumptions	941	1,151	124	2,216	2,443	2,985	322	5,750
Net difference between projected and actual earnings on pension plan investments	–	–	–	–	30,223	36,939	3,982	71,144
Change in employer's proportion	328	400	14	742	1,766	2,158	1,104	5,028
Total	$ 6,696	8,183	852	15,731	34,477	42,138	5,414	82,029

Amounts reported as deferred outflows, exclusive of contributions made after the measurement date, and deferred inflows of resources will be amortized annually and recognized in pension expense as follows:

Fiscal years	Hetchy Water	Hetchy Power	CleanPowerSF	Total
2023	$ (8,033)	(9,817)	(1,407)	(19,257)
2024	(7,470)	(9,130)	(1,278)	(17,878)
2025	(7,679)	(9,386)	(1,194)	(18,259)
2026	(8,748)	(10,693)	(1,229)	(20,670)
	$ (31,930)	(39,026)	(5,108)	(76,064)

Fiscal Year 2021

As of June 30, 2021, the City reported net pension liabilities (NPL) for its proportionate share of the net pension liability of the SFERS Plan of $5,107,270. The City's net pension liability for the Plan is measured as the proportionate share of the net pension liability. The net pension liability of the SFERS Plan is measured as of June 30, 2020 (measurement date), and the total pension liability for the SFERS Plan used to calculate the net pension liability was determined by an actuarial valuation as of June 30, 2019 rolled forward to June 30, 2020 using standard update procedures. The City's proportion of the net pension liability for the SFERS Plan was based on a projection of the City's long-term share of contributions to the pension plan relative to the projected contributions of all participating employers, actuarially determined. Hetch Hetchy's allocation of the City's proportionate share of the net pension liability for the SFERS Plan as of June 30, 2021 was $62,219, of which $26,645 for Hetchy Water, $32,566 for Hetchy Power, and $3,008 for CleanPowerSF.

For the year ended June 30, 2021, the City's recognized pension expense was $962,576 (which includes Retirement Benefit Plan pension expense of $25,243), including amortization of deferred outflows/inflows related pension items. Hetch Hetchy's allocation of pension expense including amortization of deferred outflows/inflows related pension items were $14,883, of which $6,103 for Hetchy Water, $7,459 for Hetchy Power, and $1,321 for CleanPowerSF. Pension expense increased from the prior year, largely due to the amortization of deferrals.

(Dollars in thousands, unless otherwise stated)

At June 30, 2021, Hetch Hetchy's reported deferred outflows of resources and deferred inflows of resources related to pensions were the following:

	Schedules of Deferred Outflows and Inflows of Resources							
	Deferred Outflows of Resources				Deferred Inflows of Resources			
Fiscal Year 2021	Hetchy Water	Hetchy Power	CleanPowerSF	Total	Hetchy Water	Hetchy Power	CleanPowerSF	Total
Pension contributions subsequent to the measurement date	$ 4,130	5,048	466	9,644	–	–	–	–
Differences between expected and actual experience	905	1,106	102	2,113	83	102	9	194
Changes in assumptions	1,463	1,788	165	3,416	462	564	52	1,078
Net difference between projected and actual earnings on pension plan investments	558	682	63	1,303	–	–	–	–
Change in employer's proportion	743	907	7	1,657	443	541	1,032	2,016
Total	**$ 7,799**	**9,531**	**803**	**18,133**	**988**	**1,207**	**1,093**	**3,288**

Amounts reported as deferred outflows, exclusive of contributions made after the measurement date, and deferred inflows of resources will be amortized annually and recognized in pension expense as follows:

Fiscal years	Hetchy Water	Hetchy Power	CleanPowerSF	Total
2022	$ (115)	(141)	(472)	(728)
2023	665	812	(195)	1,282
2024	1,160	1,418	(90)	2,488
2025	971	1,187	1	2,159
	$ 2,681	3,276	(756)	5,201

(Dollars in thousands, unless otherwise stated)

Actuarial Assumptions

Fiscal Year 2022

A summary of the actuarial assumptions and methods used to calculate the Total Pension Liability for SFERS Plan as of June 30, 2021 (measurement year) is provided below, including any assumptions that differ from those used in the July 1, 2020 actuarial valuation. Refer to the July 1, 2020 actuarial valuation report for a complete description of all other assumptions, which can be found on the Retirement System's website http://mysfers.org.

Key Actuarial Assumptions	SFERS Plan
Valuation Date	June 30, 2020 updated to June 30, 2021
Measurement Date	June 30, 2021
Actuarial Cost Method	Entry-Age Normal Cost
Expected Rate of Return	7.40% net of investment expenses
Municipal Bond Yield	2.21% as of June 30, 2020
	2.16% as of June 30, 2021
	Bond Buyer 20-Bond GO Index, June 25, 2020 and June 24, 2021
Inflation	2.50%
Projected Salary Increases	3.25% plus merit component based on employee classification and years of service
Discount Rate	7.40% as of June 30, 2020
	7.40% as of June 30, 2021
Administrative Expenses	0.60% of payroll as of June 30, 2020
	0.60% of payroll as of June 30, 2021

Basic COLA	Old Miscellaneous and All New Plans	Old Police & Fire, pre 7/1/75	Old Police & Fire, Charters A8.595 and A8.596	Old Police & Fire, Charters A8.559 and A8.585
June 30, 2020	2.00%	2.50%	3.10%	4.20%
June 30, 2021	2.00%	1.90%	2.50%	3.60%

Mortality rates for health Miscellaneous members were based upon adjusted PubG-2010 Employee and Retiree tables for non-annuitants and retirees, respectively. Mortality rates were then projected generationally from the base year using the MP-2019 projection scale.

The actuarial assumptions used at the June 30, 2021 measurement date was based upon the result of a demographic experience study for the period July 1, 2014 through June 30, 2019 and an economic experience study as of July 1, 2020.

(Dollars in thousands, unless otherwise stated)

Fiscal Year 2021

A summary of the actuarial assumptions and methods used to calculate the Total Pension Liability for SFERS Plan as of June 30, 2020 (measurement year) is provided below, including any assumptions that differ from those used in the July 1, 2019 actuarial valuation. Refer to the July 1, 2019 actuarial valuation report for a complete description of all other assumptions, which can be found on the Retirement System's website http://mysfers.org.

Key Actuarial Assumptions		SFERS Plan			
Valuation Date		June 30, 2019 updated to June 30, 2020			
Measurement Date		June 30, 2020			
Actuarial Cost Method		Entry-Age Normal Cost			
Expected Rate of Return		7.40% net of pension plan investment, including inflation			
Municipal Bond Yield		3.50% as of June 30, 2019			
		2.21% as of June 30, 2020			
		Bond Buyer 20-Bond GO Index, June 27, 2019 and June 25, 2020			
Inflation		2.75%			
Projected salary increases		3.50% plus merit component based employee classification and years of service			
Discount Rate		7.40% as of June 30, 2019			
		7.40% as of June 30, 2020			
Administrative Expenses		0.60% of payroll as of June 30, 2019			
		0.60% of payroll as of June 30, 2020			
Basic COLA		Old Miscellaneous and all New Plans	Old Police & Fire Pre 7/1/75	Old Police & Fire Charters A8.595 and A8.596	Old Police & Fire Charters A8.559 and A8.585
	June 30, 2019	2.00%	2.50%	3.10%	4.20%
	June 30, 2020	2.00%	2.50%	3.10%	4.20%

For healthy annuitants, the sex distinct 2009 CalPERS healthy annuitant mortality table, adjusted 1.014 for females and 0.909 for males. For active members, the sex distinct 2009 CalPERS employee mortality tables, adjusted 0.918 for females and 0.948 for males. Rates are projected generationally from the 2009 base year using a modified version of the MP-2015 projection scale.

The actuarial assumptions used at the June 30, 2020 measurement date was based upon the result of a demographic experience study for the period July 1, 2009 through June 30, 2014 and an economic experience study as of July 1, 2019.

Discount Rate

Fiscal Year 2022

SFERS Plan – The beginning and end of year measurements are based on different assumptions and contribution methods that may result in different discount rates. The discount rate was 7.40% as of June 30, 2021 (measurement date) and June 30, 2020 (measurement date).

The discount rate used to measure the Total Pension Liability as of June 30, 2021 was 7.40%. The projection of cash flows used to determine the discount rate assumed that plan member contributions will continue to be made at the rates specified in the Charter. Employer contributions were assumed to be made in accordance with the contribution policy in effect for July 1, 2020 actuarial valuation. That policy includes contributions equal to the employer portion of the entry age normal costs for members as of the valuation date, a payment for the expected administrative expenses, and an amortization payment on the unfunded actuarial liability.

(Dollars in thousands, unless otherwise stated)

The amortization payment is based on closed periods that vary in length depending on the source. Charter amendments prior to July 1, 2014 are amortized over 20 years. After July 1, 2014, any Charter changes to active member benefits are amortized over 15 years and changes to inactive member benefits, including Supplemental COLAs, are amortized over 5 years. The remaining unfunded actuarial liability not attributable to Charter amendments as of July 1, 2013 is amortized over a 19-year period commencing July 1, 2014. Experience gains and losses and assumption or method changes on or after July 1, 2014 are amortized over 20 years. The full amortization payment for the 2015 assumption changes is phased in over a period of 5 years. For the July 1, 2016 valuation, the increase in the unfunded actuarial liability attributable to the Supplemental COLAs granted on July 1, 2013 and July 1, 2014 are amortized over 17-years and 5-years respectively. All amortization schedules are established as a level percentage of payroll so payments increase 3.25% each year. The unfunded actuarial liability is based on an actuarial value of assets that smooths investment gains and losses over five years and a measurement of the actuarial liability that excludes the value of any future Supplemental COLAs.

While the contributions and measure of actuarial liability in the funding valuation do not anticipate any future Supplemental COLAs, the projected contributions for the determination of the discount rate include the anticipated future amortization payments on future Supplemental COLAs for current members when they are expected to be granted. For members who worked after November 6, 1996 and before Proposition C passed (Post 1997 Retirees), a Supplemental COLA is granted if the actual investment earnings during the year exceed the expected investment earnings on the actuarial value of assets. For members who did not work after November 6, 1996 and before Proposition C passed, the market value of assets must also exceed the actuarial liability at the beginning of the year for a Supplemental COLA to be granted. When a Supplemental COLA is granted, the amount depends on the amount of excess earnings and the basic COLA amount for each membership group. The large majority of members receive a 1.50% Supplemental COLA when granted.

Because the probability of a Supplemental COLA depends on the current funded level of the Retirement System for certain members, an assumption was developed as of June 30, 2021 for the probability and amount of Supplemental COLA for each future year. A full Supplemental COLA will be paid to all retired members, and their beneficiaries, who were retired effective July 1, 2021. The table below shows the net assumed Supplemental COLA for members with a 2.00% Basic COLA for sample years.

Assumed Supplemental COLA for Members with a 2.00% Basic COLA

Fiscal years	96 - Prop C	Before 11/6/96 or After Prop C
2023	0.75 %	0.70 %
2025	0.75	0.70
2027	0.75	0.60
2029	0.75	0.60
2031	0.75	0.60
2033+	0.75	0.50

The projection of benefit payments to current members for determining the discount rate includes the payment of anticipated future Supplemental COLAs.

(Dollars in thousands, unless otherwise stated)

Based on these assumptions, the Retirement System's fiduciary net position was projected to be available to make projected future benefit payments for current members for all future years. Projected benefit payments are discounted at the long-term expected return on assets of 7.40% to the extent the fiduciary net position is available to make the payments and at the municipal bond rate of 2.16% to the extent they are not available. The single equivalent rate used to determine the Total Pension Liability as of June 30, 2021 is 7.40%.

The long-term expected rate of return on pension plan investments was 7.40%. It was set by the Retirement Board after consideration of both expected future returns and historical returns experienced by the Retirement System. Expected future returns were determined by using a building-block method in which best-estimate ranges of expected future real rates of return were developed for each major asset class. These ranges were combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Target allocation and best estimates of geometric long-term expected real rates of return (net of pension plan investment expense and inflation) for each major asset class are summarized in the following table.

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Global Equity	37.0 %	4.2 %
Private Equity	23.0	7.9
Private Credit	10.0	5.1
Real Assets	10.0	5.1
Hedge Funds/Absolute Returns	10.0	2.9
Treasuries	8.0	0.0
Liquid Credit	5.0	2.3
Leverage	(3.0)	0.1
Total	100.0	

Fiscal Year 2021

SFERS Plan – The beginning and end of year measurements are based on different assumptions and contribution methods that may result in different discount rates. The discount rate was 7.40% as of June 30, 2020 (measurement date) and June 30, 2019 (measurement date).

The discount rate used to measure the Total Pension Liability as of the June 30, 2020 was 7.40%. The projection of cash flows used to determine the discount rate assumed that plan member contributions will continue to be made at the rates specified in the Charter. Employer contributions were assumed to be made in accordance with the contribution policy in effect for July 1, 2019 actuarial valuation. That policy includes contributions equal to the employer portion of the entry age, normal costs for members as of the valuation date, a payment for the expected administrative expenses, and an amortization payment on the unfunded actuarial liability.

The amortization payment is based on closed periods that vary in length depending on the source. Charter amendments prior to July 1, 2014 are amortized over 20 years. After July 1, 2014, any Charter changes to active member benefits are amortized over 15 years and changes to inactive member benefits, including Supplemental COLAs, are amortized over 5 years. The remaining unfunded actuarial liability not attributable to Charter amendments as of July 1, 2013 is amortized over a 19-year period commencing July 1, 2014. Experience gains and losses and assumption or method changes on or after July 1, 2014 are amortized over 20 years. The full amortization payment for the 2015 assumption changes is phased in over a period of 5 years.

(Dollars in thousands, unless otherwise stated)

For the July 1, 2016 valuation, the increase in the unfunded actuarial liability attributable to the Supplemental COLAs granted on July 1, 2013 and July 1, 2014 are amortized over 17-years and 5-years respectively. All amortization schedules are established as a level percentage of payroll, so payments increase 3.50% each year. The unfunded actuarial liability is based on an actuarial value of assets that smooths investment gains and losses over five years and a measurement of the actuarial liability that excludes the value of any future Supplemental COLAs.

While the contributions and measure of actuarial liability in the funding valuation do not anticipate any future Supplemental COLAs, the projected contributions for the determination of the discount rate include the anticipated future amortization payments on future Supplemental COLAs for current members when they are expected to be granted. For members who worked after November 6, 1996 and before Proposition C passed (Post 1997 Retirees), a Supplemental COLA is granted if the actual investment earnings during the year exceed the expected investment earnings on the actuarial value of assets. For members who did not work after November 6, 1996 and before Proposition C passed, the market value of assets must also exceed the actuarial liability at the beginning of the year for a Supplemental COLA to be granted. When a Supplemental COLA is granted, the amount depends on the amount of excess earnings and the basic COLA amount for each membership group. The large majority of members receive a 1.50% Supplemental COLA when granted.

Because the probability of a Supplemental COLA depends on the current funded level of the Retirement System for certain members, an assumption was developed as of June 30, 2020 for the probability and amount of Supplemental COLA for each future year. There were no excess earnings during the fiscal year ending June 30, 2020; consequently, no Supplemental COLA will be paid effective July 1, 2020.

The table below shows the net assumed Supplemental COLA for members with a 2.00% Basic COLA for sample years.

Assumed Supplemental COLA for Members with a 2.00% Basic COLA

Fiscal years	96 - Prop C	Before 11/6/96 or After Prop C
2022	0.75 %	0.19 %
2024	0.75	0.27
2026	0.75	0.30
2028	0.75	0.33
2030	0.75	0.35
2032	0.75	0.37
2034+	0.75	0.38

The projection of benefit payments to current members for determining the discount rate includes the payment of anticipated future Supplemental COLAs.

Based on these assumptions, the Retirement System’s fiduciary net position was projected to be available to make projected future benefit payments for current members for all future years. Projected benefit payments are discounted at the long-term expected return on assets of 7.40% to the extent the fiduciary net position is available to make the payments and at the municipal bond rate of 2.21% to the extent they are not available. The single equivalent rate used to determine the Total Pension Liability as of June 30, 2020 is 7.40%.

The long-term expected rate of return on pension plan investments was 7.40%. It was set by the Retirement Board after consideration of both expected future returns and historical returns experienced by the Retirement System. Expected future returns were determined by using a building-block method in which best-estimate ranges of expected future real rates of return were developed for each major asset class. These ranges were combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation.

(Dollars in thousands, unless otherwise stated)

Target allocation and best estimates of geometric long-term expected real rates of return (net of pension plan investment expense and inflation) for each major asset class are summarized in the following table.

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Global Equity	31.0 %	4.9 %
Private Equity	18.0	7.9
Real Assets	17.0	5.7
Hedge Funds/Absolute Returns	15.0	3.0
Private Credit	10.0	4.8
Treasuries	6.0	(0.5)
Liquid Credit	3.0	2.7
Total	100.0	

Sensitivity of Proportionate Share of the Net Pension Liability to Changes in the Discount Rate

The following presents Hetch Hetchy's allocation of the employer's proportionate share of the net pension liability/asset for the SFERS Plan, calculated using the discount rate, as well as what Hetch Hetchy's allocation of the employer's proportionate share of the net pension (asset)/liability would be if it were calculated using a discount rate that is 1% lower or 1% higher than the current rate.

Fiscal Year 2022		Hetchy Water	Hetchy Power	CleanPowerSF	Total
1% Decrease Share of NPL @ 6.40%	$	9,272	11,333	1,221	21,826
Share of NPA @ 7.40%		(13,912)	(17,004)	(1,833)	(32,749)
1% Increase Share of NPA @ 8.40%		(33,053)	(40,398)	(4,354)	(77,805)

Fiscal Year 2021		Hetchy Water	Hetchy Power	CleanPowerSF	Total
1% Decrease Share of NPL @ 6.40%	$	47,111	57,580	5,318	110,009
Share of NPL @ 7.40%		26,645	32,566	3,008	62,219
1% Increase Share of NPL @ 8.40%		9,736	11,899	1,099	22,734

(b) *Other Post-Employment Benefits*

Hetch Hetchy participates in a single-employer defined benefit other post-employment plan (the Plan). The Plan is maintained by the City and is administered through the City's Health Service System. It provides post-employment medical, dental and vision insurance benefits to eligible employees, retired employees, surviving spouses, and domestic partners. Health benefit provisions are established and may be amended through negotiations between the City and the respective bargaining units. The City does not issue a separate report on its other post-employment benefit plan.

(Continued)

(Dollars in thousands, unless otherwise stated)

GASB Statement No. 75 requires that reported results must pertain to liability and asset information within certain defined timeframes. For this report, the following timeframes are used.

San Francisco Health Service System Retiree Plan - Single-Employer

	Fiscal Year 2022	Fiscal Year 2021
Valuation Date (VD)	June 30, 2020 updated to June 30, 2021	June 30, 2020
Measurement Date (MD)	June 30, 2021	June 30, 2020
Measurement Period (MP)	July 1, 2020 to June 30, 2021	July 1, 2019 to June 30, 2020

Hetch Hetchy's proportionate share percentage of the Plan was determined based on its percentage of citywide "pay-as-you-go" contributions for the years ended June 30, 2021 and June 30, 2020. Hetch Hetchy's net OPEB liability, deferred outflows/inflows of resources related to OPEB, amortization of deferred outflows/inflows and OPEB expense to each department is based on its allocated percentage. Hetch Hetchy's proportionate share of the City's OPEB elements was 0.92%, of which 0.39% for Hetchy Water, 0.47% for Hetchy Power, and 0.06% for CleanPowerSF as of June 30, 2021 (measurement date). Hetch Hetchy's proportionate share of the City's OPEB elements was 0.92%, of which 0.38% for Hetchy Water, 0.46% for Hetchy Power, and 0.08% for CleanPowerSF as of June 30, 2020 (measurement date).

Benefits

Permanent full-time and elected employees are eligible to retire and receive post-retirement health insurance benefits when they are eligible for retirement benefits from the City and County of San Francisco's Retirement System. The eligibility requirements are as follows:

Normal Retirement	Miscellaneous	Age 50 with 20 years of credited service[1] Age 60 with 10 years of credited service
	Safety	Age 50 with 5 years of credited service
Disabled Retirement[2]		Any age with 10 years of credited service
Terminated Vested		5 years of credited service at separation

[1] Age 53 with 20 years of credited service, age 60 with 10 years of credited service, or age 65 for Miscellaneous members hired on or after January 7, 2012.
[2] No service requirement for Safety members retiring under the industrial disability benefit or for surviving spouses/domestic partners of those killed in the line of duty.

Retiree healthcare benefits are administered by the San Francisco Health Service System and include the following:

Medical:	PPO – City Health Plan (self-insured) and UHC Medicare Advantage (fully-insured) HMO – Kaiser (fully-insured) and Blue Shield (flex-funded)
Dental:	Delta Dental, DeltaCare USA and United Healthcare Dental
Vision:	Vision benefits are provided under the medical insurance plans and are administered by Vision Service Plan.

Projections of the sharing of benefit related costs are based on an established pattern of practice.

Contributions

Benefits provided under the Plan are currently paid through "pay-as-you-go" funding. Additionally, under the City Charter, active officers and employees of the City who commenced employment on or after January 10, 2009, shall contribute to the Retiree Health Care Trust Fund (Trust Fund) a percentage of compensation not to exceed 2% of pre-tax compensation. The City shall contribute 1% of compensation for officers and employees who commenced employment on or after January 10, 2009 until the City's GASB Actuary has determined that the City's portion of the Trust Fund is fully funded. At that time, the City's 1% contribution shall cease, and officers and employees will each contribute 50% of the maximum 2% of pre-tax compensation.

Starting July 1, 2016, active officers and employees of the City who commenced employment on or before January 9, 2009, shall contribute 0.25% of pre-tax compensation into the Trust Fund. Beginning on July 1st of each subsequent year, the active officers and employees of the City who commenced employment on or before January 9, 2009, shall contribute an additional 0.25% of pre-tax compensation up to a maximum of 1%. Starting July 1, 2016, the City shall contribute 0.25% of compensation into the Trust Fund for each officer and employee who commenced employment on or before January 9, 2009. Beginning on July 1st of each subsequent year, the City shall contribute an additional 0.25% of compensation, up to a maximum of 1% for each officer and employee who commenced employment on or before January 9, 2009. When the City's Actuary has determined that the City's portion of the Trust Fund is fully funded, the City's 1% contribution shall cease, and officers and employees will each contribute 50% of the maximum 1% of pre-tax compensation. Additional or existing contribution requirements may be established or modified by amendment to the City's Charter.

Fiscal Year 2022

For the fiscal year ended June 30, 2022, the City's funding was based on "pay as you go" plus a contribution of $41,841 to the Retiree Healthcare Trust Fund. The "pay as you go" portion paid by the City was $211,025 for a total contribution of $252,866 for the fiscal year ended June 30, 2022. Hetch Hetchy's proportionate share of the City's contributions for fiscal year 2022 were $2,322: $975 for Hetchy Water, $1,192 for Hetchy Power, and $155 for CleanPowerSF for fiscal year 2022 and will be recognized as a reduction of the net OPEB liability in the subsequent fiscal period.

Fiscal Year 2021

For the fiscal year ended June 30, 2021, the City's funding was based on "pay-as-you-go" plus a contribution of $39,555 to the Retiree Healthcare Trust Fund. The "pay-as-you-go" portion paid by the City was $206,439 for a total contribution of $245,994 for the fiscal year ended June 30, 2021. Hetch Hetchy's proportionate share of the City's contributions for fiscal year 2021 were $2,252: $929 for Hetchy Water, $1,136 for Hetchy Power, and $187 for CleanPowerSF.

OPEB Liabilities, OPEB Expenses and Deferred Outflows/Inflows of Resources Related to OPEB

Fiscal Year 2022

As of June 30, 2022, the City reported net OPEB liabilities related to the Plan of $3,691,122. Hetch Hetchy's proportionate share of the City's net OPEB liability as of June 30, 2022 was $33,909: $14,240 for Hetchy Water, $17,405 for Hetchy Power, and $2,264 for CleanPowerSF.

(Dollars in thousands, unless otherwise stated)

For the year ended June 30, 2022, the City's recognized OPEB expense was $272,001. Amortization of the City's deferred outflows and inflows is included as a component of OPEB expense. Hetch Hetchy's proportionate share of the City's OPEB expense was $3,002: $1,874 for Hetchy Water and $2,291 for Hetchy Power, offset by a decrease of $1,163 expense for CleanPowerSF.

As of June 30, 2022, Hetch Hetchy reported its proportionate share of the City's deferred outflows and inflows of resources related to OPEB from the following sources:

	Schedules of Deferred Outflows and Inflows of Resources							
	Deferred Outflows of Resources				Deferred Inflows of Resources			
	Hetchy Water	Hetchy Power	CleanPowerSF	Total	Hetchy Water	Hetchy Power	CleanPowerSF	Total
Contributions subsequent to measurement date	$ 975	1,192	155	2,322	–	–	–	–
Differences between expected and actual experience	428	523	68	1,019	2,193	2,680	348	5,221
Changes in assumptions	602	735	96	1,433	–	–	–	–
Net difference between projected and actual earnings on plan investments	–	–	–	–	269	329	43	641
Change in proportion	1,267	1,549	479	3,295	272	333	1,203	1,808
Total	$ **3,272**	**3,999**	**798**	**8,069**	**2,734**	**3,342**	**1,594**	**7,670**

Amounts reported as deferred outflows, exclusive of contributions made after the measurement date, and deferred inflows of resources will be amortized annually and recognized in OPEB expense as follows:

	Deferred Outflows/(Inflows) of Resources			
Fiscal years	Hetchy Water	Hetchy Power	CleanPowerSF	Total
2023	$ (105)	(128)	(264)	(497)
2024	(106)	(130)	(264)	(500)
2025	(103)	(125)	(264)	(492)
2026	46	57	(167)	(64)
2027	(43)	(53)	(59)	(155)
Thereafter	(126)	(156)	67	(215)
Total	**$ (437)**	**(535)**	**(951)**	**(1,923)**

Fiscal Year 2021

As of June 30, 2021, the City reported net OPEB liabilities related to the Plan of $3,823,334. Hetch Hetchy's proportionate share of the City's net OPEB liability as of June 30, 2021 was $35,006: $14,444 for Hetchy Water, $17,653 for Hetchy Power, and $2,909 for CleanPowerSF.

For the year ended June 30, 2021, the City's recognized OPEB expense was $320,684. Amortization of the City's deferred outflows and inflows is included as a component of OPEB expense. Hetch Hetchy's proportionate share of the City's reduction of OPEB expense was $1,859: $1,480 for Hetchy Water and $1,809 for Hetchy Power, offset by an increase of $1,430 expense for CleanPowerSF.

(Dollars in thousands, unless otherwise stated)

As of June 30, 2021, Hetch Hetchy reported its proportionate share of the City's deferred outflows and inflows of resources related to OPEB from the following sources:

		Schedules of Deferred Outflows and Inflows of Resources							
		Deferred Outflows of Resources				Deferred Inflows of Resources			
		Hetchy Water	Hetchy Power	CleanPowerSF	Total	Hetchy Water	Hetchy Power	CleanPowerSF	Total
Contributions subsequent to measurement date	$	929	1,136	187	2,252	–	–	–	–
Differences between expected and actual experience		524	640	106	1,270	2,070	2,529	417	5,016
Changes in assumptions		731	894	147	1,772	–	–	–	–
Net difference between projected and actual earnings on plan investments		9	12	2	23	–	–	–	–
Change in proportion		1,532	1,870	–	3,402	15	19	1,496	1,530
Total	$	**3,725**	**4,552**	**442**	**8,719**	**2,085**	**2,548**	**1,913**	**6,546**

Amounts reported as deferred outflows, exclusive of contributions made after the measurement date, and deferred inflows of resources will be amortized annually and recognized in OPEB expense as follows:

		Deferred Outflows/(Inflows) of Resources			
Fiscal years		Hetchy Water	Hetchy Power	CleanPowerSF	Total
2022	$	90	110	(328)	(128)
2023		96	117	(326)	(113)
2024		94	116	(326)	(116)
2025		99	120	(326)	(107)
2026		245	299	(222)	322
Thereafter		87	106	(130)	63
Total	**$**	**711**	**868**	**(1,658)**	**(79)**

(Dollars in thousands, unless otherwise stated)

Actuarial Assumptions

Fiscal Year 2022

A summary of the actuarial assumptions and methods used to calculate the total OPEB liability as of June 30, 2021 (measurement date) is provided below:

Key Actuarial Assumptions	
Valuation Date	June 30, 2020, updated to June 30, 2021
Measurement Date	June 30, 2021
Actuarial Cost Method	The Entry Age Actuarial Cost Method is used to measure the Plan's Total OPEB Liability
Healthcare Cost Trend Rates	Pre-Medicare trend starts at 6.74% trending down to ultimate rate of 4.04% in 2075
	Medicare trend starts at 7.24% trending down to ultimate rate of 4.04% in 2075
	10-County average trend starts at 5.50% trending down to ultimate rate of 4.04% in 2075
	Vision and expenses trend remains a flat 3.0% for all years
Expected Rate of Return on Plan Assets	7.00%
Salary Increase Rate	Wage Inflation Component: 3.25%
	Additional Merit Component (dependent on years of service):
	Police: 0.50% - 7.50%
	Fire: 0.50% - 14.00%
	Muni Drivers: 0.00% - 16.00%
	Craft: 0.50% - 3.75%
	Misc: 0.30% - 5.50%
Inflation Rate	Wage Inflation: 3.25% compounded annually
	Consumer Price Inflation: 2.50% compounded annually
Mortality Tables	Base mortality tables are developed by multiplying a published table by an adjustment factor developed in SFERS experience study for the period ending June 30, 2019.

Non-Annuitants

	Published Table	Adjustment Factor Male	Female
Miscellaneous	PubG-2010 Employee	0.834	0.866
Safety	PubS-2010 Employee	1.011	0.979

Healthy Retirees

	Published Table	Adjustment Factor Male	Female
Miscellaneous	PubG-2010 Employee	1.031	0.977
Safety	PubS-2010 Employee	0.947	1.044

Disabled Retirees

	Published Table	Adjustment Factor Male	Female
Miscellaneous	PubG-2010 Employee	1.045	1.003
Safety	PubS-2010 Employee	0.916	0.995

Beneficiaries

	Published Table	Adjustment Factor Male	Female
Miscellaneous	PubG-2010 Employee	1.031	0.977
Safety	PubG-2010 Employee	1.031	0.977

The mortality rates in the base tables are projected generationally from the base year using the MP-2019 projection scale.

(Dollars in thousands, unless otherwise stated)

Fiscal Year 2021

A summary of the actuarial assumptions and methods used to calculate the total OPEB liability as of June 30, 2020 (measurement year) is provided below:

Key Actuarial Assumptions	
Valuation Date	June 30, 2020
Measurement Date	June 30, 2020
Actuarial Cost Method	The Entry Age Actuarial Cost Method is used to measure the Plan's Total OPEB Liability
Healthcare Cost Trend Rates	Pre-Medicare trend starts at 4.00% in 2022, 7.00% in 2023, trending down to ultimate rate of 4.04% in 2075
	Medicare trend starts at 1.00% in 2022, 7.50% in 2023, trending down to ultimate rate of 4.04% in 2075
	10-County average trend starts at 4.5% in 2022, 5.50% in 2023, trending down to ultimate rate of 4.04% in 2075
	Vision and expenses trend remains a flat 3.0% for all years
Expected Rate of Return on Plan Assets	7.00%
Salary Increase Rate	Wage Inflation Component: 3.25%
	Additional Merit Component (dependent on years of service):
	Police: 0.50% - 7.50%
	Fire: 0.50% - 14.00%
	Muni Drivers: 0.00% - 16.00%
	Craft: 0.50% - 3.75%
	Misc: 0.30% - 5.50%
Inflation Rate	Wage Inflation: 3.25% compounded annually
	Consumer Price Inflation: 2.50% compounded annually
Mortality Tables	Base mortality tables are developed by multiplying a published table by an adjustment factor developed in SFERS experience study for the period ending June 30, 2019.

Non-Annuitants

		Adjustment Factor	
	Published Table	Male	Female
Miscellaneous	PubG-2010 Employee	0.834	0.866
Safety	PubS-2010 Employee	1.011	0.979

Healthy Retirees

		Adjustment Factor	
	Published Table	Male	Female
Miscellaneous	PubG-2010 Employee	1.031	0.977
Safety	PubS-2010 Employee	0.947	1.044

Disabled Retirees

		Adjustment Factor	
	Published Table	Male	Female
Miscellaneous	PubG-2010 Employee	1.045	1.003
Safety	PubS-2010 Employee	0.916	0.995

Beneficiaries

		Adjustment Factor	
	Published Table	Male	Female
Miscellaneous	PubG-2010 Employee	1.031	0.977
Safety	PubG-2010 Employee	1.031	0.977

The mortality rates in the base tables are projected generationally from the base year using the MP-2019 projection scale.

(Dollars in thousands, unless otherwise stated)

Sensitivity of Liabilities to Changes in the Healthcare Cost Trend Rate and Discount Rate

The following presents Hetch Hetchy's proportionate share of the City's net OPEB liability calculated using the healthcare cost trend rate, as well as what its allocation of the City's net OPEB liability would be if it were calculated using a healthcare cost trend rate that is 1% lower or 1% higher than the current rate as of June 30, 2022 and June 30, 2021:

		Hetchy Water	Hetchy Power	CleanPowerSF	2022
1% Decrease	$	12,121	14,814	1,927	28,862
Healthcare Trend		14,240	17,405	2,264	33,909
1% Increase		16,882	20,634	2,685	40,201

		Hetchy Water	Hetchy Power	CleanPowerSF	2021
1% Decrease	$	12,488	15,264	2,515	30,267
Healthcare Trend		14,444	17,653	2,909	35,006
1% Increase		16,992	20,767	3,422	41,181

Discount Rate

Fiscal Year 2022

The discount rate used to measure the Total OPEB Liability as of June 30, 2021 was 7.00%. Based on the assumption that plan member contributions will continue to be made at the rates specified in the Charter, it was determined that the Plan's projected fiduciary net position will be greater than or equal to the benefit payments projected for each future period. As such, the long-term expected rate of return on plan investments was applied to all periods of projected benefit payments to determine the total OPEB liability.

The long-term expected rate of return on OPEB plan investments was 7.00% based on expected future returns and historical returns experienced by the Trust Fund. Expected future returns were determined based on 10-year and 20-year capital market assumptions for the Trust Fund's asset allocation.

(Dollars in thousands, unless otherwise stated)

Target allocation for each major asset class and best estimates of geometric real rates of return are summarized in the following table:

Asset Class	Target Allocation	Long-term Expected Real Rate of Return
Equities		
U.S. Large Cap	28.0 %	8.2 %
U.S. Small Cap	3.0	9.5
Developed Market Equity (non-U.S.)	15.0	8.9
Emerging Market Equity	13.0	11.0
Credit		
Bank Loans	3.0	4.4
High Yield Bonds	3.0	4.4
Emerging Market Bonds	3.0	4.3
Rate Securities		
Investment Grade Bonds	9.0	1.9
Long-term Government Bonds	4.0	3.2
Short-term Treasury Inflation-Protected Securities (TIPS)	4.0	1.5
Private Markets		
Private Equity	5.0	13.0
Core Private Real Estate	5.0	6.2
Risk Mitigating Strategies		
Global Macro	5.0	4.4
Total	100.0 %	

The following presents Hetch Hetchy's proportionate share of the City's net OPEB liability calculated using the discount rate, as well as what Hetch Hetchy's proportionate share of the City's net OPEB liability would be if it were calculated using a discount rate that is 1% lower or 1% higher than the current rate:

		Hetchy Water	Hetchy Power	CleanPowerSF	Total
1% Decrease 6.00%	$	16,652	20,352	2,648	39,652
Discount Rate 7.00%		14,240	17,405	2,264	33,909
1% Increase 8.00%		12,271	14,997	1,951	29,219

Fiscal Year 2021

The discount rate used to measure the total OPEB liability as of June 30, 2020 was 7.00%. Based on the assumption that plan member contributions will continue to be made at the rates specified in the Charter, it was determined that the Plan's projected fiduciary net position will be greater than or equal to the benefit payments projected for each future period. As such, the long-term expected rate of return on plan investments was applied to all periods of projected benefit payments to determine the total OPEB liability.

The long-term expected rate of return on OPEB plan investments was 7.00% based on expected future returns and historical returns experienced by the Trust Fund. Expected future returns were determined based on 10-year and 20-year capital market assumptions for the Trust Fund's asset allocation.

(Dollars in thousands, unless otherwise stated)

Target allocation for each major asset class and best estimates of geometric real rates of return are summarized in the following table:

Asset Class	Target Allocation	Long-term Expected Real Rate of Return
Equities		
U.S. Large Cap	28.0 %	8.4 %
U.S. Small Cap	3.0	9.8
Developed Market Equity (non-U.S.)	15.0	9.6
Emerging Market Equity	13.0	11.7
Credit		
Bank Loans	3.0	4.9
High Yield Bonds	3.0	4.9
Emerging Market Bonds	3.0	4.8
Rate Securities		
Investment Grade Bonds	9.0	2.2
Long-term Government Bonds	4.0	3.1
Short-term Treasury Inflation-Protected Securities (TIPS)	4.0	1.9
Private Markets		
Private Equity	5.0	12.5
Core Private Real Estate	5.0	6.4
Risk Mitigating Strategies		
Global Macro	5.0	4.1
Total	100.0 %	

The asset allocation targets summarized above have a 20-year return estimate of 6.90%, which was weighted against a 10-year model estimating a 6.93% return, resulting in the ultimate long-term expected rate of return of 7.00%.

The following presents Hetch Hetchy's proportionate share of the City's net OPEB liability calculated using the discount rate, as well as what Hetch Hetchy's proportionate share of the City's net OPEB liability would be if it were calculated using a discount rate that is 1% lower or 1% higher than the current rate:

	Hetchy Water	Hetchy Power	CleanPowerSF	Total
1% Decrease 6.00%	$ 16,761	20,486	3,376	40,623
Discount Rate 7.00%	14,444	17,653	2,909	35,006
1% Increase 8.00%	12,551	15,341	2,528	30,420

The City issues a publicly available financial report that includes the complete note disclosures and required supplementary information related to the City's post-employment health care obligations. The report may be obtained by writing to the City and County of San Francisco, Office of the Controller, 1 Dr. Carlton B. Goodlett Place, Room 316, San Francisco, California 94102, or by calling (415) 554-7500.

(12) Related Parties

(a) *Hetch Hetchy*

Various common costs incurred by the SFPUC are allocated among Hetch Hetchy, Water, and Wastewater Enterprises. The allocations are based on the SFPUC management's best estimate and may change from year to year depending on the activities incurred by each Enterprise and the information available. For the years ended June 30, 2022 and 2021, the SFPUC allocated $22,221 or 20.7% and $20,099 or 20.5% respectively, in administrative costs including COVID-19 Project expenses, which is presented in the financial statements under various expense categories. These costs are then allocated to Hetchy Water, Hetchy Power, and CleanPowerSF in the Hetch Hetchy financial statements, using the periodically reviewed department overhead allocation model.

The City performs certain administrative services such as maintenance of accounting records and investment of cash for all fund groups within the City. The various funds are charged for these services based on the City's indirect cost allocation plan. Some City departments provide direct services such as engineering, purchasing, legal, data processing, telecommunication, and human resources to Hetch Hetchy and charge amounts designed to recover those departments' costs. These charges totaling approximately $13,003 and $12,582 for the years ended June 30, 2022 and 2021, respectively, have been included in services provided by other departments in the accompanying financial statements.

SFPUC's 75-year lease agreement with the San Francisco Recreation and Parks Department, for the use of parking spaces for its fleet of vehicles at the Civic Center Garage, commenced on February 1, 2011. Total payment under this agreement is $6,274, which was fully made as of fiscal year 2015. The expenses and prepayments among the three SFPUC Enterprises are based on 525 Golden Gate occupancy. As of June 30, 2022, Hetch Hetchy's allocable shares of expenses and prepayment were $18 and $904, respectively, and as of June 30, 2021 were $17 and $922, respectively.

(b) *Hetchy Water*

For the years ended June 30, 2022 and 2021, the SFPUC allocated $10,886 or 10.2%, and $4,585 or 4.7%, respectively, in administrative costs including COVID-19 Project expense to Hetchy Water.

The Water Enterprise purchases water from Hetchy Water. Included in the operating revenues are the water assessment fees of $45,815 and $44,149 for the years ended June 30, 2022 and 2021, respectively. The water assessment fees represent a recovery to fund upcountry, water-related costs that are not otherwise funded through Hetchy water-related revenue or Water revenue bonds.

Hetchy Water received $30,001 and $16,000 for the years ended June 30, 2022 and 2021, respectively, from the Water Enterprise to fund upcountry projects.

(c) *Hetchy Power*

For the years ended June 30, 2022 and 2021, the SFPUC allocated $8,820 or 8.2%, and $13,202 or 13.5% respectively, in administrative costs including COVID-19 Project expense to Hetchy Power.

As of June 30, 2022, and 2021, operating revenues in sales of power to departments within the City were $116,334 and $82,129, respectively.

The Water Enterprise also purchases electricity and gas from Hetchy Power. This amount totaled $11,394 and $9,790 for the years ended June 30, 2022 and 2021, respectively.

The Wastewater Enterprise purchases electricity and gas from Hetchy Power. This amount totaled $11,887 and $10,122 for the years ended June 30, 2022 and 2021, respectively.

The Low Carbon Fuel Standard (LCFS) program is a regulatory program overseen by the California Air Resources Board (CARB). The LCFS program seeks to reduce the carbon intensity of California's transportation fuel by 20% by 2030. Transportation fuel suppliers can achieve this goal by either reducing the carbon intensity of their fuels or purchasing LCFS credits from other fuel suppliers that have a lower carbon intensity. In 2017, the San Francisco Municipal Transportation Agency (SFMTA) joined the LCFS program, signing up its transit fleet of electric buses, cable cars, and light rail vehicles and generating LCFS credits. Through a Memorandum of Understanding (MOU) with SFMTA, approved by the SFPUC Commission in Resolution 17-0199, net proceeds from the sale of LCFS credits would be shared 50/50 between SFMTA and Hetchy Power. Under the MOU, Hetchy Power would take responsibility for selling the LCFS credits. In Ordinance 0199-19, the Board of Supervisors authorized Hetchy Power to establish the Low Carbon Fuel Standard Fund to account for the revenue and expenditure from the sale of LCFS credits. The Ordinance also allowed Hetchy Power to sell LCFS credits on behalf of other City agencies. As of June 30, 2022 and 2021, Hetchy Power received total payments of $2,367 and $2,362, respectively, 50% ($1,184 in fiscal year 2022 and $1,181 in fiscal year 2021) was reallocated to SFMTA and the remaining portion was reported as other non-operating revenues on the Statements of Revenues, Expenses, and Change in Net Position.

Due from other City departments was $11,804 and $12,406 for the years ended June 30, 2022 and 2021, respectively. Hetchy Power serves as the City's department for energy efficiency projects and maintains the Sustainable Energy Account (SEA) (formerly known as the Mayor's Energy Conservation Account) fund to sponsor and financially support such projects at various City departments. In this role, Hetchy Power may secure low-interest financing to supplement funds available in the SEA fund. At June 30, 2022 and 2021, projects completed or under way throughout the City amounted to $4,050 and $4,556, respectively, and are recorded as due from other government agencies.

Hetch Hetchy funded a project for the Treasure Island Development Authority and recorded a receivable in connection with an upgraded submarine power cable for the Treasure Island as due from other government agencies. This amount totaled $6,666 and $6,627 for the years ended June 30, 2022 and 2021, respectively.

(Dollars in thousands, unless otherwise stated)

As of June 30, 2022 and 2021, Hetchy Power recorded receivables of $629 and $739, respectively, due from Wastewater Enterprise for its share of costs relating to SFPUC Headquarters Living Machine System. Details of due from other City departments are as follows:

		2022	2021
Treasure Island Development Authority	$	6,666	6,627
SEA-related project: Moscone Center		4,050	4,556
Wastewater - 525 Golden Gate Headquarters Project		629	739
San Francisco Recreation and Park		314	419
Department of Public Works		145	65
Total due from other City departments		11,804	12,406
Less: current portion		(867)	(7,413)
Long-term portion as of June 30, net	$	10,937	4,993

As of June 30, 2022, Hetchy Power had payables in the amount of $380, of which $369 to the Port of San Francisco for Pier 70 Shoreside Power Project and $11 to the Department of Public Works for painting of light poles. As of June 30, 2021, Hetchy Power had payables of $369 to the Port of San Francisco for Pier 70 Shoreside Power Project.

(d) *CleanPowerSF*

For the years ended June 30, 2022 and 2021, the SFPUC allocated $2,515 or 2.4%, and $2,312 or 2.4%, respectively, in administrative costs to CleanPowerSF.

As of June 30, 2022, and 2021, operating revenue in sales of power to Hetchy Power were $2,332 and $1,072, respectively. Operating expenses in purchase of power from Hetchy Power were $1,589 and $2,456, respectively. Wholesale sales of energy, capacity and/or other electric power related products may be made between the CleanPowerSF and Hetchy Power, when available. CleanPowerSF and Hetchy Power transact for such products at prevailing market prices.

CleanPowerSF received program support services from Hetchy Power. This amount totaled $1,861 and $2,224 for the years ended June 30, 2022 and 2021, respectively.

(13) Risk Management

The Enterprise's Risk Management program includes both self-insured (i.e., self-retention) and insured exposures at risk. Risk assessments and purchasing of insurance coverage are collaboratively coordinated by SFPUC Enterprise Risk Management and the City's Office of Risk Management. With certain exceptions, the City and the Enterprise's general approach is to first evaluate the exposure at risk for self-insurance. Based on this analysis, internal mitigation strategies and financing through a self-retention mechanism are generally more economical, as the SFPUC in coordination with the City Attorney's Office administers, adjusts, settles, defends, and pays claims from budgeted resources (i.e., pay-as-you-go fund). When economically more viable or when required by debt financing covenants, the Enterprise obtains commercial insurance. At least annually, the City actuarially determines general liability and workers' compensation risk exposures. The Enterprise does not maintain commercial earthquake coverage, with certain minor exceptions, such as a sub-limit for fire-sprinkler leakage due to earthquake under the SFPUC Property Insurance Program. In the past three years, there was no settlements that exceeded insurance coverage.

(Dollars in thousands, unless otherwise stated)

	Risk	Coverage Approach
(a)	General Liability	Self-Insured
(b)	Workers' Compensation	Self-Insured Through City-wide Pool
(c)	Property	Purchased Insurance and Self-Insured
(d)	Public Officials Liability	Purchased Insurance
(e)	Employment Practices Liability	Purchased Insurance
(f)	Cyber Liability	Purchased Insurance
(g)	Crime	Purchased Insurance
(h)	Electronic Data Processing	Purchased Insurance and Self-Insured
(i)	Surety Bonds	Purchased and Contractual Risk Transfer
(j)	Errors and Omissions	Purchased and Contractual Risk Transfer
(k)	Builders' Risk	Contractual Risk Transfer

(a) *General Liability*

Through coordination with the Controller's Office and City Attorney's Office, the general liability risk exposure is actuarially determined and is addressed through pay-as-you-go funding as part of the budgetary process. Associated costs and estimates are recorded as expenses as required under GAAP for financial statement purposes for both the Enterprise and the City and County of San Francisco's Annual Comprehensive Financial Report. The claim expense allocations are determined based on actuarially determined anticipated claim payments and the projected timing of disbursement.

The changes for the general liability (damage claims) for the years ended June 30, 2022 and 2021 are as follows:

Fiscal years	Beginning of year	Claims and changes in estimates	Claims paid	End of year
Hetch Hetchy				
2022	$ 1,639	3,840	(3,797)	1,682
2021	2,886	4,843	(6,090)	1,639
Hetchy Water				
2022	$ 525	253	(151)	627
2021	558	478	(511)	525
Hetchy Power				
2022	$ 1,108	2,005	(2,090)	1,023
2021	2,222	4,212	(5,326)	1,108
CleanPowerSF				
2022	$ 6	1,582	(1,556)	32
2021	106	153	(253)	6

(b) *Workers' Compensation*

The City actuarially determines and allocates workers' compensation costs to the Enterprise according to a formula based on the following: (i) the dollar amount of claims; (ii) yearly projections of payments based on historical experience; and (iii) the size of the Enterprise's payroll. The administration of workers' compensation claims and payouts are handled by the Workers' Compensation Division of the City's Department of Human Resources. Statewide workers' compensation reforms have resulted in budgetary savings in recent years. The City continues to develop and implement improved programs, such as return-to-work programs, to lower or mitigate the growth of workers' compensation costs. Programs include accident prevention, investigation, and duty modification for injured employees with medical restrictions so return to work can occur as soon as possible.

(Dollars in thousands, unless otherwise stated)

The changes for the workers' compensation liabilities for the years ended June 30, 2022 and 2021 are as follows:

Fiscal years	Beginning of year	Claims and changes in estimates	Claims paid	End of year
Hetch Hetchy				
2022	$ 3,238	555	(315)	3,478
2021	3,387	113	(262)	3,238
Hetchy Water				
2022	$ 1,120	233	(125)	1,228
2021	1,187	18	(85)	1,120
Hetchy Power				
2022	$ 2,118	322	(190)	2,250
2021	2,200	95	(177)	2,118

*CleanPowerSF had no workers' compensation liabilities as of June 30, 2022 and 2021.

(c) ***Property***

The Enterprise's property risk management approach varies depending on whether the facility is currently under construction, the property is part of revenue-generating operations, the property is of high value, or is mission-critical in nature. During the course of construction, the Enterprise requires each contractor to provide its own insurance, while ensuring the full scope of work is covered with satisfactory levels to limit the Enterprise's risk exposure. Once construction is complete, the Enterprise performs an assessment to determine whether liability/loss coverage will be obtained through the commercial property policy or self-insurance. The majority of property scheduled in the insurance program is for (1) revenue generating facilities, (2) debt-financed facilities, (3) mandated coverage to meet statutory requirements for bonding of various public officials, or (4) high-value, mission-critical property or equipment.

(d) ***Public Officials Liability***

All Enterprise public officials with financial oversight responsibilities are provided coverage through a commercial Public Officials Liability Policy.

(e) ***Employment Practices Liability***

An Employment Practices Liability Policy is retained to protect against employment-related claims and liabilities.

(f) ***Cyber Liability***

A Cyber Liability Policy is retained to protect against cyber-related claims and liabilities.

(g) ***Crime***

The Enterprise also retains a Commercial Crime Policy, in lieu of bonding its employees, to provide coverage against liabilities or losses due to third-party crime or employee fraud.

(h) ***Electronic Data Processing***

The Electronic Data Processing policy protects selected high-value electronic property in case of damage or loss.

(i) *Surety Bonds*

Bonds are required in most phases of the public utilities construction contracting process for such phases as bid, performance, and payment or maintenance. Additionally, bonds may be required in other contracts where goods or services are provided to ensure compliance with applicable terms and conditions such as warranty.

(j) *Errors and Omissions*

Errors and omissions, also known as Professional Liability, are commonly transferred through contract to the contracted professional, or retained through self insurance on a case-by-case basis depending on the size, complexity, or scope of construction or professional service contracts. Examples of such contracts are inclusive of services provided by engineers, architects, design professionals, and other licensed or certified professional service providers.

(k) *Builders' Risk*

Builders' Risk policies of insurance are required to be provided by the contractor on all construction projects for the full value of construction.

(l) *Energy Risk Management*

Similar to other electric utilities with a heavy reliance on hydroelectric generation, Hetch Hetchy is exposed to risks that could impact its ability to generate net revenues to fund operating and capital investment activities. Hydroelectric generation facilities in the Sierra Nevada are the primary source of electricity for Hetch Hetchy. For this reason, the Hetch Hetchy revenues can vary with watershed hydrology, unexpected generator outages, and market prices for energy. Given the inherent risk for all hydroelectric generation, several risk management interventions have been developed to mitigate exposure.

(m) *Enterprise Risk Management*

The Power Enterprise adopted the ISO 31000 standard for Hetchy Power and the CleanPowerSF program as the framework for implementing Enterprise Risk Management (ERM). The Enterprise utilizes this framework to systematically and proactively identify and mitigate risks that threatens its business objectives. Since not all risks are insurable or transferable contractually, the ERM program provides an additional method to manage risks and protect the Enterprise's current and expanding business allowing for increased operational resiliency and the ability to capitalize on opportunities.

(14) Commitments and Litigation

(a) *Commitments*

As of June 30, 2022 and 2021, Hetch Hetchy has outstanding commitments with third parties of $199,283 and $143,404, respectively, for various capital projects and other purchase agreements for materials and services.

Hetchy Water

To meet certain requirements of the Don Pedro Reservoir operating license, the City entered into an agreement with the Modesto Irrigation District (MID) and Turlock Irrigation District (TID) in which the Districts would be responsible for an increase in water flow releases from the reservoir in exchange for annual payments from the City, which are included in Hetchy Water's operating expenses. The payment amounts were $5,129 and $5,069 for fiscal years 2022 and 2021, respectively. The payments are to be made for the duration of the license, but may be terminated with one year's prior written notice after 2001. The City and the Districts have also agreed to monitor the fisheries in the lower Tuolumne River for the duration of the license. A maximum monitoring expense of $1,400 is to be shared between the City and the Districts over the term of the license. The City's share of the monitoring costs is 52%, while the Districts are responsible for 48% of the costs.

Hetchy Power

Wholesale Distribution Tariff (WDT) and Key Operating Agreements for Grid Access

Upon expiration of the City's previous Interconnection Agreement with PG&E, the City began taking service in 2015 under the Wholesale Distribution Tariff (WDT) for distribution service and under the CAISO Open-Access Transmission Tariff for transmission service. The FERC-regulated Wholesale Distribution Tariff is implemented by PG&E through the City specific Service Agreements and Interconnection Agreements. The terms of these agreements have been in contention since the effective date. The City continues to negotiate with PG&E and, where necessary, file complaints and protests at FERC. In September 2020, PG&E filed a revised WDT. Under the terms of the new WDT, the City would pay substantially higher rates, at least twice to potentially four times the current charges, and be required to install costly and inefficient equipment not needed for technical, safety or reliability of operations. In addition, Hetchy Power would no longer be allowed to connect to the "network" grid in the center of San Francisco; have new secondary interconnections; and/or serve any small, typically unmetered loads, such as streetlights, DAS, traffic signals, and bus shelters.

Staff prepare regular reporting to the Board of Supervisors outlining on-going disputes with PG&E over project requirements, costs and delays. During fiscal years 2022 and 2021, Hetchy Power purchased distribution services for $22,404 and $8,868, respectively, from PG&E under the terms of the Service Agreements and Interconnection Agreements that implement the WDT. The City continues to litigate and dispute these terms at FERC and in the court systems; and pursue the purchase of PG&E's electric grid in San Francisco.

Western System Power Pool and other Market Purchases and Sales

Hetchy Power may purchase or sell energy and other related products (such as ancillary services, spinning reserves, resource adequacy products, and congestion revenue rights) with different market entities through the Western System Power Pool (WSPP) and the CAISO. During fiscal years 2022 and 2021, Hetchy Power purchased $4,152 and $0 of power and other related products, respectively. Sales of excess power, after meeting Hetch Hetchy's obligations, were $0 for 2022 and $469 or 110,043 MWh for 2021, respectively.

Power Purchase Agreement (PPA)

Hetchy Power (Buyer) purchases energy, capacity, and environmental attributes from a local solar photovoltaic project located at Sunset Reservoir (the facility) pursuant to the 2009 25-year PPA with SFCity1, LP, owned by Duke Energy (Seller). In November 2010, the facility commenced commercial operation and began to provide Hetchy Power energy generated by the facility.

The PPA sets the starting purchase price of generated energy at $235/MWh, increasing by 3% each year throughout the term of the agreement, and it is expected that the facility will generate 6,560 MWh per year. In fiscal year 2022, the facility generated 6,460 MWh and the rate was at $334/MWh. In the event that the facility generates more energy than expected due to better than normal meteorological conditions, the PPA requires the Buyer to purchase all the excess energy but generation in excess of 120% of expected is purchased at no cost. The PPA also requires the Seller to generate a minimum amount of energy from the facility annually. If energy production falls below 50% of expected, the Seller must provide replacement power, and if energy falls below 90% of expected, the price for energy generated is lowered. In fiscal years 2022 and 2021, purchases of energy under the Agreement were $2,225, or 6,460 MWh, and $2,127, or 6,598 MWh, respectively.

APX, Inc

Hetchy Power and CleanPowerSF participate in the California Independent System Operator (CAISO) energy markets which requires the SFPUC to have a contract with a certified Scheduling Coordinator (SC). In June 2022, CleanPowerSF renewed a 5-year contract with APX, Inc with contract amount not to exceed $134,743 to fulfill this requirement. APX, Inc provides a number of services including but not limited to an interface with the CAISO's energy scheduling portal, manage invoice payments to the CAISO and communications between the CAISO and the SFPUC, and dispatch of the Hetch Hetchy plant 24 hours a day, seven days a week. The contract also provides that APX, Inc will act as the SC for renewable generation plants under some of CleanPowerSF's Power Purchase Agreements. Hetchy Power's share was $456 and $472 as of June 30, 2022 and 2021, respectively. CleanPowerSF's share was $192 as of June 30, 2022 and 2021.

CleanPowerSF

CleanPowerSF has added multiple additional short-term and medium-term contracts with multiple counterparties pursuant to master agreements, including the WSPP Master Agreement, to purchase renewable, carbon-free and conventional energy and resource adequacy capacity. CleanPowerSF has also entered into long-term contracts for renewable energy and capacity with renewable energy developers including sPower, Terra-Gen, NextEra and EDF Renewables. These contracts have been entered to allow CleanPowerSF to meet its existing retail sales obligations, to support future retail sales from citywide enrollment into the CleanPowerSF program, and to comply with state law requiring that 65% of CleanPowerSF's RPS compliance targets be fulfilled by RPS-eligible electricity from contracts of 10 or more years. Citywide enrollment was substantively completed with the enrollment of residential accounts in April 2019. Since it began serving customers in 2016, CleanPowerSF's cumulative opt-out rate is 4.3% of all enrolled accounts. The total power purchase cost, net of wholesale sales, equaled $238,149 and $188,533 in fiscal years 2022 and 2021, respectively.

CleanPowerSF contracts with Calpine Energy Solutions to provide meter data management, billing and customer care support. Calpine is responsible for calculating and providing CleanPowerSF charges to Pacific Gas & Electric (PG&E), which in turn bills both CleanPowerSF and PG&E customers for electricity transmission, distribution, and CleanPowerSF generation services. PG&E remits payments received from customers for CleanPowerSF charges to the City. During fiscal years 2022 and 2021, amounts paid were $4,730 and $6,664, respectively.

CleanPowerSF Power Purchase Agreement (PPA)

In November 2021, CleanPowerSF amended an existing Renewable Power Purchase Agreement with Blythe Solar IV, LLC (seller) to purchase a storage product from the solar powered generation facility located in Blythe, California pursuant to the 20-year PPA. Under the revised agreement, the project in Blythe, California, will add batteries to the operating 62-MW solar photovoltaic power plant. The contract, including the new battery component, is for $196,399 over 20 years.

In November 2020, CleanPowerSF executed a Power and Storage Purchase Agreement to purchase solar product and storage product from a solar powered generation facility and battery storage facility located at Livermore pursuant to the 25-year PPA with IP Aramis, LLC (Seller). As of June 30, 2022 and 2021, CleanPowerSF received cash collateral of $9,000 for Development Assurance and Performance Assurance from the Seller.

CleanPowerSF Guarantee

In March 2018, CleanPowerSF entered into a five-year, $75,000 Credit Agreement with JPMorgan Chase Bank, National Association ("Bank") to provide letters of credit or loans from the Bank to guarantee certain power purchase agreement payment obligations of CleanPowerSF and to meet working capital needs, if necessary. In November 2021 the Credit Agreement was decreased (at the request of CleanPowerSF) the available amount from $75,000 to $20,000, and the stated term of the agreement was extended to March 2024. Additional changes to the agreement effected by the November 2021 Amendments include elimination of target reserve requirements, revisions to debt service coverage (allowing for a liquidity test two times in the aggregate for any consecutive four quarters) and rate-setting covenants, changes to ongoing reporting requirements to the Bank, and changes to events of default, including the addition of an event of default if CleanPowerSF's long-term unenhanced credit rating is downgraded below investment grade or suspended, withdrawn or otherwise unavailable. In May 2022 CleanPowerSF executed another amendment to its Credit Agreement to eliminate and change certain financial covenants contained in the 2018 Credit Agreement. Specifically, this Amendment eliminated the covenant of the Commission to maintain a specified debt service coverage ratio and changed such financial covenant to commit the Commission to maintain a specified level of Day Liquidity on Hand (as defined in the Credit Agreement). The Credit Agreement is secured by CleanPowerSF's net revenues; there is no pledge of, or lien on net revenues that ranks senior to the obligations under the Credit Agreement. The Bank issued letters of credit in the face amounts totaling $5,847 and $13,810 for fiscal years ending June 30, 2022 and 2021, respectively. CleanPowerSF did not draw on the Credit Agreement during fiscal years 2022 and 2021. Accordingly, the uncommitted credit capacity under the Credit Agreement was $14,153 and $61,190 during fiscal years 2022 and 2021, respectively.

Original financial covenants include that CleanPowerSF maintain a Debt Service Coverage Ratio as defined in the Credit Agreement of not less than 1.05 for each fiscal quarter, as determined for the four consecutive fiscal quarter periods ended on the last day of such fiscal quarter. As of June 30, 2021, CleanPowerSF was not in compliance with this financial covenant as calculated for the four consecutive fiscal quarters ended on such date, resulting in a covenant event of default under the Credit Agreement. In connection with subsequent amendments to the Credit Agreement, JPMorgan Chase granted a waiver of such event of default for the period ended June 30, 2021. CleanPowerSF was in compliance with other covenants and requirements of the

Credit Agreement as of June 30, 2021. CleanPowerSF was in compliance with all covenants and requirements of the Credit Agreement as amended as of June 30, 2022.

GASB Statement No. 88, *Certain Disclosures Related to Debt, Including Direct Borrowings and Direct Placements,* requires the disclosure of certain information related to debt, including unused letters of credit. Significant events of default under the Credit Agreement, include 1) non-payment, 2) material breach of warranty, representation, or other non-remedied breach of covenants as specified in the agreement and 3) bankruptcy and insolvency events, which could result in all outstanding loans under the Credit Agreement to be immediately due and payable; or the immediate termination of the Bank's commitment to issue letters of credit or make loans under the Credit Agreement.

Green Tariff and Community Solar Green Tariff Programs for Disadvantaged Communities

In June 2018. the California Public Utilities Commission (CPUC) established the Disadvantaged Communities-Green Tariff (DAC-GT) and Community Solar Green Tariff (CSGT) program to address barriers to solar adoption faced by low-income electric customers in neglected communities. The DAC-GT program provides a 20% rate discount on 100% Renewable Portfolio Standard (RPS) eligible electricity service to income-qualified customers residing in Disadvantaged Communities (DACs) as defined by the California Environmental Protection Agency's (Cal EPA). Similar to DAC-GT, the CSGT program allows primarily for the DACs to benefit from the development of solar generation projects located in their own or nearby DACs. CSGT projects must also have a local community-based sponsor that supports site selection and customer enrollment.

The CPUC approved CleanPowerSF's application to establish DAC-GT and CSGT programs in April 2021 and to receive funds to cover program administration and a portion of electricity supply costs. CleanPowerSF began enrolling customers in the DAC-GT program branded as "SuperGreen Saver" on June 1, 2022. The CSGT program is expected to start serving customers during fiscal year 2025, once CleanPowerSF is able to procure electricity from a CSGT-eligible solar project(s). As of June 30, 2022, CleanPowerSF received $1,150 from a combination of ratepayer funds and California Cap and Trade Auction proceeds.

(b) ***Litigation***

Hetch Hetchy is a defendant in various legal actions and claims that arise during the normal course of business. The final disposition of these legal actions and claims is not determinable. However, in the opinion of management, the outcome of any litigation of these matters will not have a material effect on the financial position or changes in net position of Hetch Hetchy.

(c) ***Grants***

Grants that the Enterprise received are subject to audit and final acceptance by the granting agency. Current and prior year costs of such grants are subject to adjustment upon audit.

(d) ***Environmental Issue***

As of June 30, 2022, and 2021, there was no pollution remediation liability recorded.

(Continued)

(15) Subsequent Event

(a) *Hetchy Power and CleanPowerSF - Extension on the Moratorium on Shutoff of Electric Service*

On September 13, 2022, the Commission approved to extend moratorium on shutoff of electric service for Hetchy Power residential retail customers in the City through June 30, 2023 and granted the General Manager discretion to restart severance and liens processes to multi-family residential accounts carrying balances greater than $25 which are 90 days or more past due. In addition, the temporary suspension of the return of delinquent residential CleanPowerSF customers to PG&E has also been extended through June 30, 2023.

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55 Second Street
San Francisco, CA 94105

Independent Auditors’ Report on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance With *Government Auditing Standards*

The Honorable Mayor and Board of Supervisors

City and County of San Francisco: We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the business-type activities and each major fund of Hetch Hetchy Water and Power and Clean Power (Hetch Hetchy), as of and for the year ended June 30, 2022, and the related notes to the financial statements, which collectively comprise the Hetch Hetchy’s basic financial statements, and have issued our report thereon dated January 27, 2023.

Report on Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered Hetch Hetchy’s internal control over financial reporting (internal control) as a basis for designing audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of Hetch Hetchy’s internal control. Accordingly, we do not express an opinion on the effectiveness of Hetch Hetchy’s internal control.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A material weakness is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity’s financial statements will not be prevented, or detected and corrected, on a timely basis. A significant deficiency is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses or significant deficiencies may exist that were not identified.

Report on Compliance and Other Matters

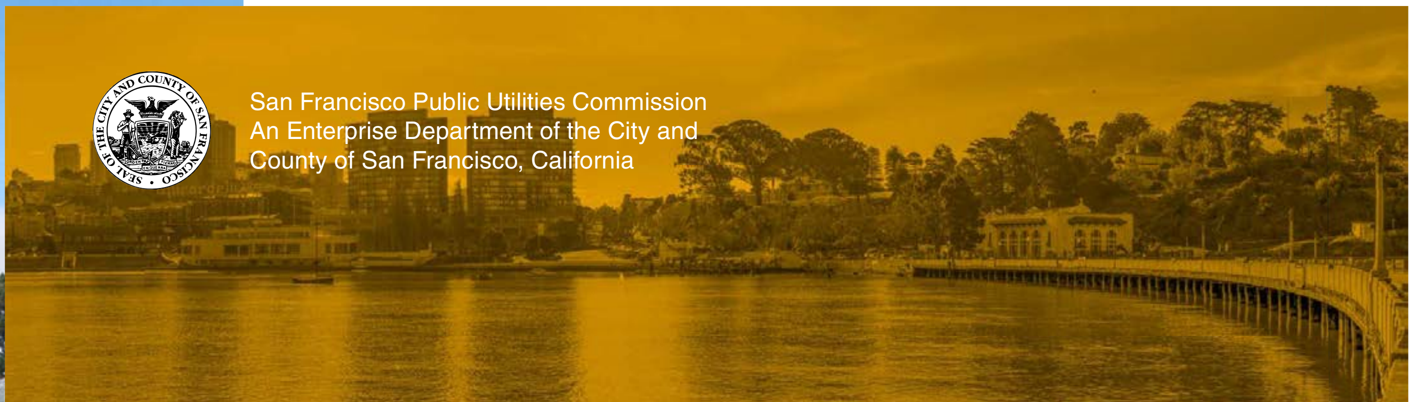
As part of obtaining reasonable assurance about whether Hetch Hetchy’s financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the financial statements. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of This Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of Hetch Hetchy's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

KPMG LLP

San Francisco, California
January 27, 2023



Our mission

To provide our customers with high-quality, efficient and reliable water, power and sewer services in a manner that values environmental and community interests and sustains the resources entrusted to our care.

Cover photo: San Francisco Embarcadero
Back photos: San Francisco Aquatic Park, Conservatory of Flowers in Golden Gate Park
Photos by: Robin Scheswohl and Sabrina Wong

Date of Publication: January 2023

SFPUC Financial Services
525 Golden Gate Avenue, 4th Floor
San Francisco, CA 94102-3220
sfpuc.org

APPENDIX C

PROPOSED FORM OF OPINION OF BOND COUNSEL

Upon issuance of the 2023A Bonds, Stradling Yocca Carlson & Rauth, a Professional Corporation, Bond Counsel, proposes to render its final approving opinion in substantially the following form:

[Closing Date]

Public Utilities Commission of the
City and County of San Francisco
San Francisco, California

$123,905,000
Public Utilities Commission
of the City and County of San Francisco
Power Revenue Bonds,
2023 Series A

Members of the Commission:

We have acted as bond counsel to the Public Utilities Commission of the City and County of San Francisco (the "Commission"), a commission duly constituted under the Charter (the "Charter") of the City and County of San Francisco (the "City"), in connection with the issuance of the Commission's Power Revenue Bonds, 2023 Series A in the aggregate principal amount of $123,905,000 (the "Bonds"). The Bonds are being issued pursuant to authority granted by the Charter of the City, and a Trust Indenture, dated as of May 1, 2015, by and between the Commission and U.S. Bank Trust Company National Association, as successor trustee (the "Trustee"), as amended and supplemented (the "Original Indenture"), and as further supplemented by a Third Supplemental Trust Indenture, dated as of October 1, 2023 (the "Third Supplemental Indenture" and together with the Original Indenture, the "Indenture") by and between the Commission and the Trustee. Capitalized terms not otherwise defined herein shall have the respective meanings ascribed thereto in the Indenture.

In our capacity as bond counsel, we have reviewed the Indenture, ordinances and resolutions of the Commission and the City, certifications of the Commission, the Trustee and others, opinions of counsel to the Commission, the City and the Trustee, the Tax Certificate relating to the Bonds (the "Tax Certificate"), and such other documents, opinions and instruments as we deemed necessary to render the opinions set forth herein.

We have assumed, but have not verified, that the signatures on all documents, certificates and opinions that we have reviewed are genuine. In our examination, we have assumed, but have not verified, the legal capacity of all natural persons, the authenticity of all documents submitted to us as originals, the conformity to original documents of all documents submitted to us as certified or photostatic copies or by facsimile or other means of electronic transmission or which we obtained from sites on the internet, and the authenticity of the originals of such latter documents. As to facts and certain other matters and the consequences thereof relevant to the opinions expressed herein and the other statements made herein, we have relied without investigation or verification upon, and assumed the accuracy and completeness of certificates, letters (including opinion letters), and oral and written statements and representations of public officials, officers and other representatives of the Commission and the City, counsel for the Commission and the City, and others.

Our services as bond counsel were limited to such examination and to rendering the opinions set forth below. Furthermore, we have assumed compliance with all covenants and agreements in the Indenture and the Tax Certificate, including (without limitation) covenants and agreements compliance with which is necessary to assure that future actions, omissions or events will not cause the interest on the Bonds to be included in gross income for federal income tax purposes. With respect to the opinions expressed herein, we call attention to the fact that the enforceability of the rights and obligations under the Bonds, the Indenture and the Tax Certificate are subject to bankruptcy, insolvency, reorganization, moratorium, fraudulent conveyance and other similar laws affecting creditors' rights, to the application of equitable principles if equitable remedies are sought, to the exercise of judicial discretion in appropriate cases and to limitations on legal remedies against cities and counties in the State of California.

By delivering this letter, we are not expressing any opinion with respect to any indemnification, contribution, liquidated damages, penalty (including any remedy deemed to constitute a penalty), right of set-off, arbitration, judicial reference, choice of law, choice of forum, choice of venue, non-exclusivity of remedies, waiver or severability provisions contained in the Bonds or the Indenture, nor are we expressing any opinion with respect to the state or quality of title to or interest in any assets described in or as subject to the lien of the Indenture or the accuracy or sufficiency of the description contained therein of, or the remedies available to enforce liens on any assets thereunder.

Based upon the foregoing and subject to the limitations and qualifications herein specified we are of the opinion, as of the date hereof and under existing law, that:

(1) The Bonds have been duly authorized, issued by, and constitute the valid and binding limited obligations of, the Commission.

(2) The Third Supplemental Indenture has been duly authorized, executed and delivered by the Commission, and the Indenture constitutes the valid and binding obligation of the Commission. The Indenture creates a valid pledge of the Revenues of the Power Enterprise, after payment of Operation and Maintenance Expenses and any Priority R&R Fund Deposits, to secure the payment of the principal of and interest on the Bonds, as and to the extent set forth in the Indenture and subject to the provisions of the Indenture permitting the application thereof for the purposes and on the terms and conditions set forth therein.

(3) The Bonds are limited obligations of the Commission and the Commission is not obligated to pay the principal of, or interest on, the Bonds from any source of funds other than Revenues, after payment of Operation and Maintenance Expenses and any Priority R&R Fund Deposits. The general fund of the City is not liable and the credit or taxing power of the City is not pledged for the payment of the Bonds or the interest thereon. The Bonds are not secured by a legal or equitable pledge of, or charge, lien or encumbrance upon, any of the property of the City or of the Commission or any of their income or receipts, except the Revenues, after payment of Operation and Maintenance Expenses and any Priority R&R Fund Deposits.

(4) Under existing statutes, regulations, rulings and judicial decisions, interest on the Bonds is excluded from gross income for federal income tax purposes and is not an item of tax preference for purposes of calculating the federal alternative minimum tax imposed on individuals; however, for tax years beginning after December 31, 2022, with respect to applicable corporations as defined in Section 59(k) of the Internal Revenue Code of 1986, as amended (the "Code"), interest on the Bonds might be taken into account in determining adjusted financial statement income for the purposes of computing the alternative minimum tax imposed on such corporations.

(5) The interest on the Bonds is exempt from State of California personal income tax.

(6) The amount by which a Bond owner's original basis for determining loss on sale or exchange in the applicable Bonds (generally, the purchase price) exceeds the amount payable on maturity (or on an earlier call date) constitutes amortizable Bond premium, which must be amortized under Section 171 of the Code; such amortizable Bond premium reduces the Bond owner's basis in the applicable Bonds (and the amount of tax-exempt interest received), and is not deductible for federal income tax purposes. The basis reduction as a result of the amortization of Bond premium may result in a Bond owner realizing a taxable gain when a Bond is sold by the owner for an amount equal to or less (under certain circumstances) than the original cost of the Bond to the owner.

The opinions expressed herein as to the exclusion from gross income of interest on the Bonds are based upon certain representations of fact and certifications made by the Commission and others, and are subject to the condition that the Commission complies with all requirements of the Code that must be satisfied subsequent to the issuance of the Bonds to assure that such interest will not become includable in gross income for federal income tax purposes. Failure to comply with such requirements of the Code might cause the interest to be included in gross income for federal income tax purposes retroactive to the date of issuance of the Bonds. The Commission has covenanted to comply with all such requirements.

The Indenture and the Tax Certificate permit certain actions to be taken or to be omitted if a favorable opinion of bond counsel is provided with respect thereto. No opinion is expressed herein as to the effect on the exclusion from gross income of interest for federal income tax purposes with respect to any Bonds if any such action is taken or omitted based upon the opinion or advice of counsel other than ourselves. Other provisions of the Code may give rise to adverse federal income tax consequences to particular Bond owners. Other than expressly stated herein, we express no other opinion regarding tax consequences with respect to the Bonds.

The opinions expressed and the statements made herein are based on an analysis of existing laws, regulations, rulings and judicial decisions and cover certain matters not directly addressed by such authorities. Such opinions and statements may be adversely affected by actions taken or events occurring, including a change in law, regulation or ruling (or in the application or official interpretation of any law, regulation or ruling) after the date hereof. We have not undertaken to determine, or to inform any person, whether such actions are taken or such events occur, and we have no obligation to update this letter in light of such actions or events or for any other reason.

No opinion is expressed herein on the accuracy, completeness or sufficiency of the official statement relating to the Bonds or other offering material relating to the Bonds and we expressly disclaim any duty to advise the owners of the Bonds with respect to matters contained in such official statement or other offering material.

This opinion is limited to the laws of the State of California and the federal laws of the United States. We assume no responsibility with respect to the applicability or the effect of the laws of any other jurisdiction.

Respectfully submitted,

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APPENDIX D

FORM OF CONTINUING DISCLOSURE CERTIFICATE

$123,905,000
Public Utilities Commission of the
City and County of San Francisco
Power Revenue Bonds, 2023 Series A

[Closing Date]

This Continuing Disclosure Certificate (the "Disclosure Certificate") is executed and delivered by the Public Utilities Commission of the City and County of San Francisco (the "SFPUC") in connection with the issuance of its Power Revenue Bonds, 2023 Series A (the "2023A Bonds"). The 2023A Bonds are being issued pursuant to a Third Supplemental Trust Indenture, dated as of October 1, 2023 (the "Third Supplemental Indenture"), by and between the SFPUC and U.S. Bank Trust Company, National Association, as trustee (the "Trustee"). The Third Supplemental Indenture amends and supplements the Trust Indenture, dated as of May 1, 2015, by and between the SFPUC and the Trustee (as amended and supplemented, including as supplemented by the Third Supplemental Indenture, the "Indenture"). The SFPUC covenants and agrees as follows:

SECTION 1. Purpose of the Disclosure Certificate. This Disclosure Certificate is being executed and delivered by the SFPUC for the benefit of the Holders and Beneficial Owners of the 2023A Bonds and in order to assist the Participating Underwriters in complying with Securities and Exchange Commission (the "S.E.C.") Rule 15c2-12(b)(5).

SECTION 2. Definitions. In addition to the definitions set forth in the Indenture, which apply to any capitalized term used in this Disclosure Certificate unless otherwise defined in this Section 2, the following capitalized terms shall have the following meanings:

"**Annual Report**" shall mean any Annual Report provided by the SFPUC pursuant to, and as described in, Sections 3 and 4 of this Disclosure Certificate.

"**Beneficial Owner**" shall mean any person that: (a) has or shares the power, directly or indirectly, to make investment decisions concerning ownership of any 2023A Bonds (including persons holding 2023A Bonds through nominees, depositories or other intermediaries) including, but not limited to, the power to vote or consent with respect to any 2023A Bonds or to dispose of ownership of any 2023A Bonds; or (b) is treated as the owner of any 2023A Bonds for federal income tax purposes.

"**Dissemination Agent**" shall mean the SFPUC, acting in its capacity as Dissemination Agent under this Disclosure Certificate, or any successor Dissemination Agent designated in writing by the SFPUC and which has filed with the SFPUC a written acceptance of such designation.

"**Financial Obligation**" means, for purposes of the Listed Events set out in Section 5(a)(15) and Section (5)(a)(16), a (i) debt obligation; (ii) derivative instrument entered into in connection with, or pledged as security or a source of payment for, an existing or planned debt obligation; or (iii) guarantee of (i) or (ii). The term "Financial Obligation" shall not include municipal securities (as defined in the Securities Exchange Act of 1934, as amended) as to which a final official statement (as defined in the Rule) has been provided to the MSRB consistent with the Rule.

"**Holder**" shall mean either the registered owners of the 2023A Bonds, or, if the 2023A Bonds are registered in the name of The Depository Trust Company or another recognized depository, any applicable participant in such depository system.

"**Listed Events**" shall mean any of the events listed in Section 5(a) of this Disclosure Certificate.

"**MSRB**" shall mean the Municipal Securities Rulemaking Board or any other entity designated or authorized by the Securities and Exchange Commission to receive continuing disclosure filings pursuant to the Rule.

Until otherwise designated by the MSRB or the Securities and Exchange Commission, filings with the MSRB are to be made through the Electronic Municipal Market Access (EMMA) website of the MSRB currently located at *https://emma.msrb.org/*.

"**Official Statement**" shall mean the final Official Statement, dated September 27, 2023, prepared in connection with the sale and offering of the 2023A Bonds.

"**Participating Underwriters**" shall mean any of the original underwriters or purchasers of the 2023A Bonds required to comply with the Rule in connection with the offering of the 2023A Bonds.

"**Rule**" shall mean Rule 15c2-12(b)(5) adopted by the S.E.C. under the Securities Exchange Act of 1934, as the same may be amended from time to time.

SECTION 3. Provision of Annual Reports.

(a) The SFPUC shall, or shall cause the Dissemination Agent to, not later than March 31 of each year, commencing with the report for Fiscal Year 2022-23 (which is due not later than March 31, 2024), provide to the MSRB an Annual Report which is consistent with the requirements of Section 4 of this Disclosure Certificate. If the Dissemination Agent is not the SFPUC, the SFPUC shall provide the Annual Report to the Dissemination Agent not later than 15 days prior to said date. The Annual Report must be submitted in electronic format and accompanied by such identifying information as is prescribed by the MSRB, and may cross-reference other information as provided in Section 4 of this Disclosure Certificate. However, if the audited financial statements of the SFPUC are not available by the date required above for the filing of the Annual Report, the SFPUC shall submit unaudited financial statements and submit the audited financial statements as soon as they are available. If the SFPUC's Fiscal Year changes, it shall give notice of such change in the same manner as for a Listed Event under Section 5(b).

(b) If the SFPUC is unable to provide to the MSRB an Annual Report by the date required in subsection (a), the SFPUC shall send a notice to the MSRB in substantially the form attached as Exhibit A.

(c) The Dissemination Agent shall (if the Dissemination Agent is other than the SFPUC) file a report with the SFPUC certifying the date that the Annual Report was provided to the MSRB pursuant to this Disclosure Certificate.

SECTION 4. Content of Annual Reports. The SFPUC's Annual Report shall contain or incorporate by reference the following information:

(a) Audited financial statements of the Power Enterprise for the prior Fiscal Year, prepared in accordance with generally accepted accounting principles applicable to the SFPUC from time to time. If the SFPUC's audited financial statements are not available by the date the Annual Report is required to be filed, the Annual Report shall contain unaudited financial statements in a format similar to the financial statements contained in the final Official Statement, and the audited financial statements shall be filed in the same manner as the Annual Report when they become available;

(b) An update for the prior Fiscal Year of the table in the Official Statement entitled "TABLE 9, POWER ENTERPRISE ELECTRIC SERVICE ACCOUNTS BY CUSTOMER CATEGORY";

(c) An update for the prior Fiscal Year of the table in the Official Statement entitled "TABLE 14, AVERAGE ELECTRIC SERVICE RATES"; and

(d) An update for the prior Fiscal Year of the table in the Official Statement entitled "TABLE 17, POWER ENTERPRISE HISTORICAL REVENUES AND OPERATION AND MAINTENANCE EXPENSES FOR FISCAL YEARS ENDED JUNE 30 (IN THOUSANDS)".

Any or all of the items listed above may be set forth in a document or set of documents, or may be included by specific reference to other documents, including official statements of debt issues of the SFPUC or related public entities, which are available to the public on the MSRB website. If the document included by reference is a final official statement, it must be available from the MSRB. The SFPUC shall clearly identify each such other document so included by reference.

SECTION 5. Reporting of Significant Events.

(a) The SFPUC shall give, or cause to be given, notice of the occurrence of any of the following Listed Events with respect to the 2023A Bonds:

1. Principal and interest payment delinquencies;

2. Non-payment related defaults, if material;

3. Unscheduled draws on debt service reserves reflecting financial difficulties;

4. Unscheduled draws on credit enhancements reflecting financial difficulties;

5. Substitution of credit or liquidity providers, or their failure to perform;

6. Adverse tax opinions, the issuance by the Internal Revenue Service of proposed or final determinations of taxability, Notices of Proposed Issue (IRS Form 5701-TEB) or other material notices or determinations with respect to the tax status of the 2023A Bonds, or other material events affecting the tax status of the 2023A Bond;

7. Modifications to rights of Holders, if material;

8. Optional, unscheduled or contingent 2023A Bond calls, if material, and tender offers;

9. Defeasances;

10. Release, substitution, or sale of property securing repayment of the 2023A Bonds, if material;

11. Rating changes;

12. Bankruptcy, insolvency, receivership or similar event of the SFPUC;

13. The consummation of a merger, consolidation, or acquisition involving the SFPUC or the sale of all or substantially all of the assets of the SFPUC, other than in the ordinary course of business, the entry into a definitive agreement to undertake such an action or the termination of a definitive agreement relating to any such actions, other than pursuant to its terms, if material;

14. Appointment of a successor or additional trustee or the change of name of a trustee, if material;

15. Incurrence of a Financial Obligation of the SFPUC, if material, or agreement to covenants, events of default, remedies, priority rights, or other similar terms of a Financial Obligation of the SFPUC, any of which affect Holders, if material; and

16. Default, event of acceleration, termination event, modification of terms, or other similar events under the terms of a Financial Obligation of the SFPUC, any of which reflect financial difficulties.

Note: For the purposes of the event identified in subsection (a)(12), the event is considered to occur when any of the following occur: the appointment of a receiver, fiscal agent or similar officer for the SFPUC in a proceeding under the United States Bankruptcy Code or in any other proceeding under state or federal law in which a court or governmental authority has assumed jurisdiction over substantially all of the assets or business of the SFPUC, or if such jurisdiction has been assumed by leaving the existing governing body and officials or officers in possession but subject to the supervision and orders of a court or governmental authority, or the entry of an order confirming a plan of reorganization, arrangement or liquidation by a court or governmental authority having supervision or jurisdiction over substantially all of the assets or business of the SFPUC.

(b) Whenever the SFPUC obtains knowledge of the occurrence of a Listed Event in subsection(a), the SFPUC shall, or shall cause the Dissemination Agent (if not the SFPUC) to, file a notice of such occurrence with the MSRB, in an electronic format as prescribed by the MSRB, in a timely manner not in excess of 10 business days after the occurrence of the Listed Event. Notwithstanding the foregoing, notice of a Listed Event described in subsection (a)(8) above need not be given under this subsection any earlier than the notice (if any) of the underlying event is given to holders of affected 2023A Bonds under the Indenture.

(c) The SFPUC intends to comply with the Listed Events described in subsection (a)(15) and subsection (a)(16) and the definition of "Financial Obligation" in Section 2, with reference to the Rule, any other applicable federal securities laws and the guidance provided by the S.E.C. in Release No. 34-83885 dated August 20, 2018 (the "2018 Release"), and any further amendments or written guidance provided by the S.E.C. or its staff with respect to the amendments to the Rule effected by the 2018 Release.

SECTION 6. Termination of Reporting Obligation. The SFPUC's obligations under this Disclosure Certificate shall terminate upon the legal defeasance, prior redemption or payment in full of all of the 2023A Bonds. If such termination occurs prior to the final maturity of the 2023A Bonds, the SFPUC shall give notice of such termination in the same manner as for a Listed Event under Section 5(b).

SECTION 7. Dissemination Agent. The SFPUC may, from time to time, appoint or engage a Dissemination Agent to assist it in carrying out its obligations under this Disclosure Certificate, and may discharge any such Dissemination Agent, with or without appointing a successor Dissemination Agent. The Dissemination Agent shall have only such duties as are specifically set forth in this Disclosure Certificate.

SECTION 8. Amendment; Waiver. Notwithstanding any other provision of this Disclosure Certificate, the SFPUC may amend or waive this Disclosure Certificate or any provision of this Disclosure Certificate, provided that the following conditions are satisfied:

(a) If the amendment or waiver relates to the provisions of Sections 3(a), 3(b), 4 or 5(a), it may only be made in connection with a change in circumstances that arises from a change in legal requirements, change in law, or change in the identity, nature or status of an obligated person with respect to the 2023A Bonds or the type of business conducted;

(b) The undertaking, as amended or taking into account such waiver, would, in the opinion of the City Attorney of the City and County of San Francisco or nationally recognized bond counsel, have complied with the requirements of the Rule at the time of the original issuance of the 2023A Bonds, after taking into account any amendments or interpretations of the Rule, as well as any change in circumstances; and

(c) The amendment or waiver either (i) is approved by the owners of a majority in aggregate principal amount of the 2023A Bonds or (ii) does not, in the opinion of the City Attorney or nationally recognized bond counsel, materially impair the interests of the Holders.

In the event of any amendment or waiver of a provision of this Disclosure Certificate, the SFPUC shall describe such amendment in the next Annual Report, and shall include, as applicable, a narrative explanation of the reason for the amendment or waiver and its impact on the type (or in the case of a change of accounting principles, on the presentation) of financial information or operating data being presented by the SFPUC. In addition, if the amendment relates to the accounting principles to be followed in preparing financial statements: (i) notice of such change shall be given in the same manner as for a Listed Event under Section 5; and (ii) the Annual Report for the year in which the change is made should present a comparison (in narrative form and also, if feasible, in quantitative form) between the financial statements as prepared on the basis of the new accounting principles and those prepared on the basis of the former accounting principles.

SECTION 9. Additional Information. Nothing in this Disclosure Certificate shall be deemed to prevent the SFPUC from disseminating any other information, using the means of dissemination set forth in this Disclosure Certificate or any other means of communication, or including any other information in any Annual Report or notice of occurrence of a Listed Event, in addition to that which is required by this Disclosure Certificate. If the SFPUC chooses to include any information in any Annual Report or notice of occurrence of a Listed Event in addition to that which is specifically required by this Disclosure Certificate, the SFPUC shall have no obligation under this Disclosure Certificate to update such information or include it in any future Annual Report or notice of occurrence of a Listed Event.

SECTION 10. Default. In the event of a failure of the SFPUC to comply with any provision of this Disclosure Certificate, any Participating Underwriters, Holder or Beneficial Owner of the 2023A Bonds may take such actions as may be necessary and appropriate, including seeking mandate or specific performance by court order, to cause the SFPUC to comply with its obligations under this Disclosure Certificate; provided that any such action may be instituted only in a federal or state court located in the City and County of San Francisco, State of California. Failure by the SFPUC to comply with any provision of this Disclosure Certificate shall not be deemed an Event of Default under the Indenture and the sole remedy under this Disclosure Certificate in the event of any failure of the SFPUC to comply with this Disclosure Certificate shall be an action to compel performance.

SECTION 11. Beneficiaries. This Disclosure Certificate shall inure solely to the benefit of the SFPUC, the Dissemination Agent, the Participating Underwriters and Holders and Beneficial Owners from time to time of the 2023A Bonds, and shall create no rights in any other person or entity.

Dated as of the date first written above.

PUBLIC UTILITIES COMMISSION OF THE
CITY AND COUNTY OF SAN FRANCISCO

By: ______________________________
General Manager

Approved as to form:

DAVID CHIU
CITY ATTORNEY

By: ______________________________
Deputy City Attorney

CONTINUING DISCLOSURE CERTIFICATE

EXHIBIT A

FORM OF NOTICE TO THE MUNICIPAL SECURITIES RULEMAKING BOARD OF FAILURE TO FILE ANNUAL REPORT

Name of Issuer:	Public Utilities Commission of the City and County of San Francisco
Name of Issue:	Power Revenue Bonds, 2023 Series A
Date of Issuance:	October 12, 2023

NOTICE IS HEREBY GIVEN that the SFPUC has not provided an Annual Report with respect to the above-named Bonds as required by Section 3 of the Continuing Disclosure Certificate of the Public Utilities Commission of the City and County of San Francisco, dated October 12, 2023. The SFPUC anticipates that the Annual Report will be filed by _______________.

Dated: _______________

PUBLIC UTILITIES COMMISSION OF
THE CITY AND COUNTY OF SAN FRANCISCO

By: [to be signed only if filed]
Title: ____

APPENDIX E

SECURITIES DEPOSITORY AND THE BOOK-ENTRY SYSTEM

The information in this Appendix E has been obtained from DTC for use in securities offering documents, and the SFPUC takes no responsibility for the accuracy or completeness thereof. The SFPUC cannot and does not give any assurances that DTC, DTC Participants or Indirect Participants will distribute to the beneficial owners either (a) payments of interest, principal or premium, if any, with respect to the 2023A Bonds or (b) certificates representing ownership interest in or other confirmation of ownership interest in the 2023A Bonds, or that they will so do on a timely basis or that DTC, DTC Participants or DTC Indirect Participants will act in the manner described in this Official Statement. The current "Rules" applicable to DTC are on file with the Securities and Exchange Commission and the current "Procedures" of DTC to be followed in dealing with DTC Participants are on file with DTC.

As used in this Appendix E, "Securities" means the 2023A Bonds, "Issuer" means the SFPUC, and "Agent" means the Trustee.

1. The Depository Trust Company ("DTC"), New York, NY, will act as securities depository for the securities (the "Securities"). The Securities will be issued as fully-registered securities registered in the name of Cede & Co. (DTC's partnership nominee) or such other name as may be requested by an authorized representative of DTC. One fully-registered Security certificate will be issued for each issue of the Securities, each in the aggregate principal amount of such issue, and will be deposited with DTC. If, however, the aggregate principal amount of any issue exceeds $500 million, one certificate will be issued with respect to each $500 million of principal amount, and an additional certificate will be issued with respect to any remaining principal amount of such issue.

2. DTC, the world's largest securities depository, is a limited-purpose trust company organized under the New York Banking Law, a "banking organization" within the meaning of the New York Banking Law, a member of the Federal Reserve System, a "clearing corporation" within the meaning of the New York Uniform Commercial Code, and a "clearing agency" registered pursuant to the provisions of Section 17A of the Securities Exchange Act of 1934. DTC holds and provides asset servicing for over 3.5 million issues of U.S. and non-U.S. equity issues, corporate and municipal debt issues, and money market instruments (from over 100 countries) that DTC's participants ("Direct Participants") deposit with DTC. DTC also facilitates the post-trade settlement among Direct Participants of sales and other securities transactions in deposited securities, through electronic computerized book-entry transfers and pledges between Direct Participants' accounts. This eliminates the need for physical movement of securities certificates. Direct Participants include both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, clearing corporations, and certain other organizations. DTC is a wholly-owned subsidiary of The Depository Trust & Clearing Corporation ("DTCC"). DTCC is the holding company for DTC, National Securities Clearing Corporation and Fixed Income Clearing Corporation, all of which are registered clearing agencies. DTCC is owned by the users of its regulated subsidiaries. Access to the DTC system is also available to others such as both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, and clearing corporations that clear through or maintain a custodial relationship with a Direct Participant, either directly or indirectly ("Indirect Participants"). DTC has a Standard & Poor's rating of AA+. The DTC Rules applicable to its Participants are on file with the Securities and Exchange Commission. More information about DTC can be found at www.dtcc.com. The information contained on this Internet site is not incorporated herein by reference.

3. Purchases of Securities under the DTC system must be made by or through Direct Participants, which will receive a credit for the Securities on DTC's records. The ownership interest of each actual purchaser of each Security ("Beneficial Owner") is in turn to be recorded on the Direct and Indirect Participants' records. Beneficial Owners will not receive written confirmation from DTC of their purchase. Beneficial Owners are, however, expected to receive written confirmations providing details of the transaction, as well as periodic statements of their holdings, from the Direct or Indirect Participant through which the Beneficial Owner entered into the transaction. Transfers of ownership interests in the Securities are to be accomplished by entries made on the books of Direct and Indirect Participants acting on behalf of Beneficial Owners. Beneficial Owners will not receive

certificates representing their ownership interests in Securities, except in the event that use of the book-entry system for the Securities is discontinued.

4. To facilitate subsequent transfers, all Securities deposited by Direct Participants with DTC are registered in the name of DTC's partnership nominee, Cede & Co., or such other name as may be requested by an authorized representative of DTC. The deposit of Securities with DTC and their registration in the name of Cede & Co. or such other DTC nominee do not effect any change in beneficial ownership. DTC has no knowledge of the actual Beneficial Owners of the Securities; DTC's records reflect only the identity of the Direct Participants to whose accounts such Securities are credited, which may or may not be the Beneficial Owners. The Direct and Indirect Participants will remain responsible for keeping account of their holdings on behalf of their customers.

5. Conveyance of notices and other communications by DTC to Direct Participants, by Direct Participants to Indirect Participants, and by Direct Participants and Indirect Participants to Beneficial Owners will be governed by arrangements among them, subject to any statutory or regulatory requirements as may be in effect from time to time. Beneficial Owners of Securities may wish to take certain steps to augment the transmission to them of notices of significant events with respect to the Securities, such as redemptions, tenders, defaults, and proposed amendments to the Security documents. For example, Beneficial Owners of Securities may wish to ascertain that the nominee holding the Securities for their benefit has agreed to obtain and transmit notices to Beneficial Owners. In the alternative, Beneficial Owners may wish to provide their names and addresses to the registrar and request that copies of notices be provided directly to them.

6. Redemption notices shall be sent to DTC. If less than all of the Securities within an issue are being redeemed, DTC's practice is to determine by lot the amount of the interest of each Direct Participant in such issue to be redeemed.

7. Neither DTC nor Cede & Co. (nor any other DTC nominee) will consent or vote with respect to Securities unless authorized by a Direct Participant in accordance with DTC's MMI Procedures. Under its usual procedures, DTC mails an Omnibus Proxy to Issuer as soon as possible after the record date. The Omnibus Proxy assigns Cede & Co.'s consenting or voting rights to those Direct Participants to whose accounts Securities are credited on the record date (identified in a listing attached to the Omnibus Proxy).

8. Redemption proceeds, distributions, and dividend payments on the Securities will be made to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC. DTC's practice is to credit Direct Participants' accounts upon DTC's receipt of funds and corresponding detail information from Issuer or Agent, on payable date in accordance with their respective holdings shown on DTC's records. Payments by Participants to Beneficial Owners will be governed by standing instructions and customary practices, as is the case with securities held for the accounts of customers in bearer form or registered in "street name," and will be the responsibility of such Participant and not of DTC, Agent, or Issuer, subject to any statutory or regulatory requirements as may be in effect from time to time. Payment of redemption proceeds, distributions, and dividend payments to Cede & Co. (or such other nominee as may be requested by an authorized representative of DTC) is the responsibility of Issuer or Agent, disbursement of such payments to Direct Participants will be the responsibility of DTC, and disbursement of such payments to the Beneficial Owners will be the responsibility of Direct and Indirect Participants.

9. DTC may discontinue providing its services as depository with respect to the Securities at any time by giving reasonable notice to Issuer or Agent. Under such circumstances, in the event that a successor depository is not obtained, Security certificates are required to be printed and delivered.

10. Issuer may decide to discontinue use of the system of book-entry-only transfers through DTC (or a successor securities depository). In that event, Security certificates will be printed and delivered to DTC.

The information in this section concerning DTC and DTC's book-entry system has been obtained from sources that SFPUC believes to be reliable, but the SFPUC takes no responsibility for the accuracy thereof.

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